

**SAN MATEO COUNTY
DEFERRED COMPENSATION ADVISORY COMMITTEE
THURSDAY, NOVEMBER 4, 2021 (9:00 AM– 12:00 PM)**

AGENDA

LOCATION: <https://us02web.zoom.us/j/85497561029?pwd=anBvKzE4QUpUTERFYkhKQmpyR3FZQT09>
Dial-In: 669-900-9128; Meeting ID: 854 9756 1029; Passcode: 315124

Committee Members	Appointed As...
Lisa Okada, Chair	Human Resources Director Designee
Tiffany Htwe	Tax Collector-Treasurer Designee
Laurel Finnegan	Non-Management Appointee
Lilibeth Dames	Non-Management Appointee
Robert Raw	Non-Management Appointee
Steve Perry	Non-Management Appointee
Bridget Love	Management Appointee
Michael Wentworth	Management Appointee
Victoria Mejia	Management Appointee

Staff	Empower	NFP
Kim Pearson Marife Viola Jay Castellano	Bob Gleason Patrick Washington	Bill Tugaw Paul Hackleman Vince Learned

CALL TO ORDER

ROLL CALL

ORDERS OF THE DAY

PUBLIC COMMENTS

CONSENT ITEMS

1. Approval of Minutes: August 26, 2021 (Jay Castellano)
2. Approval of Minutes: October 27, 2021 (Jay Castellano)
3. Acceptance of Empower's System & Organization Controls Report (Bob Gleason)



OLD BUSINESS

4. None

NEW BUSINESS

5. Annual Investment Review (Vince Learned)
 - A. Review and Approve Investment Policy Statement
 - B. Presentation of Market Overview
 - C. Presentation of Scorecard Methodology
 - D. Presentation and Acceptance of Annual Investment Review
6. Empower Reporting
 - A. Presentation of Quarterly Plan Review (Bob Gleason)
 - B. Presentation of Quarterly Update on Call Response Performance (Bob Gleason)
7. Review and Approval of 2022 Participant Communication/Education Plan (Bob Gleason)
8. Review and Approval of 2022 DCAC Education Plan (Paul Hackleman)
9. Annual Plan Survey
 - A. Review and Approve Annual Plan Survey Policy (Jay Castellano)
 - B. Review and Discussion of 2022 Plan Survey Questions (Jay Castellano)
10. Discussion, Feedback of NAGDCA 2021 Conference (Attendees)
11. Discussion, Feedback on October 27, 2021, DCAC Retreat (Jay Castellano)
12. Selection and Approval of 2022 Recordkeeping Request For Proposals Selection Committee (Jay Castellano)
13. Legislative Updates (Bill Tugaw and Bob Gleason)

INFORMATIONAL ITEMS

14. Upcoming Meeting Dates
 - A. Thursday, February 24, 2022
 - B. Thursday, May 26, 2022
 - C. Thursday, August 25, 2022
 - D. Thursday, November 3, 2022

NEXT MEETING AGENDA ITEMS

ADJOURNMENT

RECURRING QUARTERLY AGENDA ITEMS

<p>February 24, 2022</p> <ul style="list-style-type: none">• Empower Quarterly Plan Review• Empower Quarterly Investment Review• Empower Quarterly Performance Update• Final Education Plan for Committee and Participants• Plan Document Review• Fiduciary Briefcase• NAGDCA Participation / Award Consideration• Annual Survey: Review, approve draft survey	<p>August 25, 2022</p> <ul style="list-style-type: none">• Empower Quarterly Plan Review• Empower Quarterly Investment Review• Empower Quarterly Performance Update• Education Policy Review• Due Diligence – Special Services• Next Calendar Year’s Meeting Schedule• Annual Survey: Include workplan items in new budget, as appropriate
<p>May 26, 2022</p> <ul style="list-style-type: none">• Empower Annual Plan Review• Empower Quarterly Investment Review• Empower Quarterly Plan Review• Empower Quarterly Performance Update• Finalize NAGDCA conference attendees• Provider Performance Review• Budget / Workplan• Fund Balance Policy• Reserve Policy• Annual Survey: Review, discuss survey results	<p>November 3, 2022</p> <ul style="list-style-type: none">• Empower Quarterly Plan Review• Empower Quarterly Performance Update• NFP Annual Investment Review• Investment Policy Review• 2022 Education Plan for Participants• 2022 Education Plan for Committee• NAGDCA Highlights• Cyber Security Update• Annual Survey: Discuss, provide direction on next survey

**SAN MATEO COUNTY
DEFERRED COMPENSATION ADVISORY COMMITTEE
THURSDAY, AUGUST 26, 2021**

MINUTES

Link to Recording: <https://hr.smcgov.org/deferred-compensation-governance>

Committee Members	Appointed As...
Lisa Okada, Chair, present Tiffany Htwe, present at 9:07am Laurel Finnegan, present, departed at 11:25am Lilibeth Dames, present at 10:15am Robert Raw, present Steve Perry, present Bridget Love, present Michael Wentworth, present, departed at 10:00am, returned at 11:00am, departed at 12:00pm Victoria Mejia, absent	Human Resources Director Designee Tax Collector-Treasurer Designee Non-Management Appointee Non-Management Appointee Non-Management Appointee Non-Management Appointee Management Appointee Management Appointee Management Appointee

Staff	Empower	NFP
Kim Pearson Marife Viola Jay Castellano	Una Morabito Dario Gomez-Garcia Patrick Washington Jeff Blanchard	Bill Tugaw Paul Hackleman
Others		
Sarah Kiebler, Alliant Wendy Dominguez, Innovest	Rick Rodgers, Innovest Paul Nacario, Innovest	Robert Stebbins, Innovest

CALL TO ORDER

The meeting was called to order at 9:02am.

ROLL CALL

All DCAC members except Members Htwe, Dames and Mejia were present at the point of Roll Call. Member Htwe joined the meeting at 9:07am, and Member Dames joined at 10:15am. Member Wentworth departed the meeting at 11:00am.



ORDERS OF THE DAY

A motion was made to approve the agenda as posted except that Item 7.A. Empower Quarterly Investment Review was presented immediately after the Consent Items.

M/S/C Perry/Raw/6-0 (Absent: Htwe, Dames and Mejia). Motion approved by roll call vote.

PUBLIC COMMENTS

None.

CONSENT ITEMS

1. Approval of February 25, 2021, Minutes

A motion was made to approve the February 25, 2021, Minutes.

M/S/C Perry/Love/7-0 (Absent: Dames and Mejia). Motion approved by roll call vote.

2. Approval of March 16, 2021, Minutes

A motion was made to approve the March 16, 2021, Minutes.

M/S/C Raw/Perry/7-0 (Absent: Dames and Mejia). Motion approved by roll call vote.

NEW BUSINESS

7. Empower Reporting
 - A. Presentation of Quarterly Investment Review (Jeff Blanchard)

The DCAC accepted this presentation by Blanchard.

OLD BUSINESS

3. Oral Update on Initiatives Related to Annual Survey

Gomez-Garcia reported on Empower's initiatives in the area of on-line account access, including our plan's custom URL, on-line appointments, Care Center, Plan Highlights document.

The DCAC accepted this update.

4. Oral Update on Initiatives Related to One-Fund Report

Gomez-Garcia reported on Empower's initiatives to communicate with plan participants who might not be using target-date funds as intended.

The DCAC accepted this update.

5. Oral Update on Nomination for NAGDCA Leadership Award

Castellano reported that the County plan did not receive a 2021 NAGDCA Leadership Award for our nomination in the area of Education Programs—specifically for the County’s use of its Learning Management System (LMS) for financial wellness classes and for the County policy that allows employees to count financial wellness classes towards their annual training requirement. Staff will discuss the DCAC in February 2022 the possibility of another nomination.

The DCAC accepted this update.

NEW BUSINESS

6. Oral Update on Empower’s Acquisition of Prudential Retirement

Morabito reported on Empower’s intention to acquire Prudential Retirement. Anticipated to close in First Quarter of 2022m the acquisition includes about 200 government plans and \$5.5 billion assets. Prudential integrations will occur after MassMutual integrations in 3rd Quarter of 2022. No impact to the County. Also, 100% of Prudential’s customer-facing associates will be offered jobs at Empower.

The DCAC accepted this update.

7. Empower Reporting

B. Presentation of Quarterly Plan Review

C. Presentation of Quarterly Update on Call Response Performance

Gomez-Garcia presented the Quarterly Plan Review in the agenda packet. He also verbally reported that 2nd Quarter Call Response Performance was 84% of all calls were answered within 80 seconds. This performance compares to the 1st Quarter at 57% and the standard of 80%.

The DCAC accepted these presentations.

8. Review and Approval of Education Policy

Gomez-Garcia reviewed this version of the Education Policy has been updated in conformance with Empower conventions.

A motion was made to approve the Education Policy with recommended edits.

M/S/C Perry/Love/7-0 (Absent: Wentworth and Mejia). Motion approved by roll call vote.

9. Review and Approval of Agenda for Annual Retreat on October 27, 2021

Castellano reviewed the memo that captured recommendations from staff and consultants that the retreat focus on two topics: Financial Wellness and Retiree Education. Member Finnegan reinforced the importance of retiree education, and Gomez-Garcia offered the capacity to demonstrate Empower’s technology solutions

specific to retiree education. Chair Okada expressed interest in incorporating information on target-date glide paths and training on investments.

A motion was made to approve the memo recommendations and to incorporate comments by Member Finnegan and Chair Okada as possible.

M/S/C Raw/Finnegan/7-0 (Absent: Wentworth and Mejia). Motion approved by roll call vote.

10. Legislative Updates

Tugaw reviewed content in NFP's News & Views newsletter for Q3 2021.

The DCAC accepted this update.

11. Review and Approval of Investment Consultant RFP Selection

Member Finnegan recused herself from this last agenda item, stating that while she while she has no financial interest in the matter, she is recusing herself because her father is a senior consultant on one of the RFP proposals.

Castellano reviewed the memo and PowerPoint from the RFP Selection Committee, highlighting the observations accumulated through the RFP process.

A motion was made to accept the proposal from NFP. During discussion, concerns were raised about whether this discussion should occur in open or closed session. Member Perry recalled that prior RFP selection discussions occurred in closed session. Member Wentworth also expressed concern about whether the selection and screening criteria was consistently applied throughout the process.

M/S/C Perry/Htwe/3 (Htwe, Raw, Perry)-3 (Okada, Dames, Love) (Absent: Finnegan, Wentworth, Mejia). Motion failed by roll call vote.

As this meeting was already running past schedule and there were unresolved questions, a subsequent motion was made to schedule a special DCAC meeting on this same topic and for staff to address issues raised in this discussion.

M/S/C Love/Dames/6-0 (Absent: Finnegan, Wentworth, Mejia). Motion approved by roll call vote.

INFORMATIONAL ITEMS

1. Upcoming Meeting Dates
 - A. Wednesday, October 27, 2021—Retreat
 - B. Thursday, November 4, 2021
 - C. Thursday, February 24, 2022
 - D. Thursday, May 26, 2022
 - E. Thursday, August 25, 2022

Information only.

NEXT MEETING AGENDA ITEMS

None.

ADJOURNMENT

The meeting was adjourned at 12:25pm.



COUNTY OF SAN MATEO

HUMAN RESOURCES DEPARTMENT Inter-Departmental Correspondence

DATE: November 4, 2021

TO: Deferred Compensation Advisory Committee

FROM: Jay Castellano, Employee Benefits

SUBJECT: Cyber-Security Due Diligence Reports

RECOMMENDATION:

Accept Empower's Service Organization Control (SOC2) reports that indicate Empower employs adequate controls to ensure our plan participants' accounts' online security, integrity, confidentiality and privacy.

BACKGROUND:

Management of the recordkeeper and oversight of their operations, including their information security, is one of the Deferred Compensation Advisory Committee's many responsibilities. With regard to information security, the DCAC can assess our recordkeeper's, Empower, operations through its independently-produced SOC2 audit report.

As noted by Empower's Trish McGinity in the DCAC's October 27 retreat, the SOC2 report is the most common report requested by plan sponsors. Other readily-available, independently-produced information security reports from Empower include the SOC1 report and Empower's Data Security and Privacy Addendums. During the next year and prior to the DCAC's 2022 cyber-security review, staff will work with the County Information Systems Department and with our peer plans to develop a DCAC-specific cyber-security policy and recommend the specific documentation needed to support that policy.



**Defined Benefit and Defined Contribution Recordkeeping
Investment Service Operations System**

System and Organization Controls (SOC 1[®]) Report

**Applicable to Recordkeeping Operations for the period October 1,
2019 through September 30, 2020**

System and Organization Controls (SOC 1[®]) Report is a registered service mark of the AICPA

**Massachusetts Mutual Life Insurance Company
Defined Benefit and Defined Contribution Recordkeeping
Investment Service Operations System**

System and Organization Controls (SOC 1®) Report

Applicable to Defined Contribution and Defined Benefit
Recordkeeping Operations for the period

October 1, 2019 through September 30, 2020

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Section I
Independent Service Auditor's Report provided by
KPMG LLP



KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Service Auditor's Report

To the Management of Massachusetts Mutual Life Insurance Company

Scope

We have examined Massachusetts Mutual Life Insurance Company's (MassMutual or the Company) Defined Benefit and Defined Contribution Recordkeeping Operations description of its system entitled "Description of the Defined Benefit and Defined Contribution Investment Service Operations System" for processing user entities' transactions throughout the period October 1, 2019 to September 30, 2020 (the description) and the suitability of the design and operating effectiveness of the controls included in the description to achieve the related control objectives stated in the description, based on the criteria identified in MassMutual's Assertion (the assertion). The controls and control objectives included in the description are those that management of MassMutual believes are likely to be relevant to user entities' internal control over financial reporting, and the description does not include those aspects of the Defined Benefit and Defined Contribution Investment Service Operations System that are not likely to be relevant to user entities' internal control over financial reporting.

The information included in Section V, "Other Information Provided by MassMutual", is presented by management of MassMutual to provide additional information and is not a part of MassMutual's description of its Defined Benefit and Defined Contribution Recordkeeping Investment Services Operations System made available to user entities during the period October 1, 2019 to September 30, 2020. Information about MassMutual's business continuity planning and the impact of COVID-19 has not been subjected to the procedures applied in the examination of the description of the Defined Benefit and Defined Contribution Investment Service Operations System and of the suitability of the design and operating effectiveness of controls to achieve the related control objectives stated in the description of the Defined Benefit and Defined Contribution Investment Service Operations System and, accordingly, we express no opinion upon it.

MassMutual uses subservice organizations identified in Section III to perform some of the services provided to user entities that are likely to be relevant to those user entities' internal control over financial reporting. The description includes only the control objectives and related controls of MassMutual and excludes the control objectives and related controls of the subservice organizations. The description also indicates that certain control objectives specified by MassMutual can be achieved only if complementary subservice organization controls assumed in the design of MassMutual's controls are suitably designed and operating effectively, along with the related controls at MassMutual. Our examination did not extend to controls of the subservice organizations and we have not evaluated the suitability of the design or operating effectiveness of such complementary subservice organization controls.

Service Organization's Responsibilities

In Section II, MassMutual has provided an assertion about the fairness of the presentation of the description and suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description. MassMutual is responsible for preparing the description and its assertion, including the completeness, accuracy, and method of presentation of the description and assertion, providing the services covered by the description, specifying the control objectives and stating them in the description, identifying the risks that threaten the achievement of the control objectives, selecting the criteria stated in the assertion, and designing, implementing, and documenting controls that are suitably designed and operating effectively to achieve the related control objectives stated in the description.



Service Auditor's Responsibilities

Our responsibility is to express an opinion on the fairness of the presentation of the description and on the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of CPAs. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether, in all material respects, based on the criteria in management's assertion, the description is fairly presented and the controls were suitably designed and operating effectively to achieve the related control objectives stated in the description throughout the period October 1, 2019 to September 30, 2020. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

An examination of a description of a service organization's system and the suitability of the design and operating effectiveness of controls involves:

- performing procedures to obtain evidence about the fairness of the presentation of the description and the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on the criteria in management's assertion,
- assessing the risks that the description is not fairly presented and that the controls were not suitably designed or operating effectively to achieve the related control objectives stated in the description,
- testing the operating effectiveness of those controls that management considers necessary to provide reasonable assurance that the related control objectives stated in the description were achieved,
- evaluating the overall presentation of the description, suitability of the control objectives stated in the description, and suitability of the criteria specified by the service organization in its assertion.

Inherent limitations

The description is prepared to meet the common needs of a broad range of user entities and their auditors who audit and report on user entities' financial statements and may not, therefore, include every aspect of the system that each individual user entity may consider important in its own particular environment. Because of their nature, controls at a service organization may not prevent, or detect and correct, all misstatements in processing or reporting transactions. Also, the projection to the future of any evaluation of the fairness of the presentation of the description, or conclusions about the suitability of the design or operating effectiveness of the controls to achieve the related control objectives stated in the description is subject to the risk that controls at a service organization may become ineffective.

Description of Tests of Controls

The specific controls tested and the nature, timing, and results of those tests are listed in Section IV.

Opinion

In our opinion, in all material respects, based on the criteria described in MassMutual's assertion:

- a. the description fairly presents the Defined Benefit and Defined Contribution Investment Service Operations System that was designed and implemented throughout the period October 1, 2019 to September 30, 2020;
- b. the controls related to the control objectives stated in the description were suitably designed to provide reasonable assurance that the control objectives would be achieved if the controls operated effectively throughout the period October 1, 2019 to September 30, 2020, and subservice organizations applied



the complementary controls assumed in the design of MassMutual's controls throughout the period October 1, 2019 to September 30, 2020; and

- c. the controls operated effectively to provide reasonable assurance that the control objectives stated in the description were achieved throughout the period October 1, 2019 to September 30, 2020 if complementary subservice organization controls, assumed in the design of MassMutual's controls, operated effectively throughout the period October 1, 2019 to September 30, 2020.

Restricted use

This report, including the description of tests of controls and results thereof in Section IV, is intended solely for the information and use of management of MassMutual, user entities of MassMutual's Defined Benefit and Defined Contribution Investment Service Operations System during some or all of the period October 1, 2019 to September 30, 2020, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by user entities themselves, when assessing the risks of material misstatement of user entities' financial statements. This report is not intended to be and should not be used by anyone other than these specified parties.

KPMG LLP

November 19, 2020
New York, NY

Section II
MassMutual's Management Assertion



Massachusetts Mutual Life Insurance Company
1295 State Street
Springfield, MA 01111

MassMutual's Assertion

November 19, 2020

We have prepared the description of Massachusetts Mutual Life Insurance Company's (MassMutual or the Company) Defined Benefit and Defined Contribution Investment Service Operations System entitled, "Description of the Defined Benefit and Defined Contribution Investment Service Operations System", for processing user entities' transactions throughout the period October 1, 2019 to September 30, 2020 (description) for user entities of the system during some or all of the period October 1, 2019 to September 30, 2020, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by subservice organizations of the system themselves, when assessing the risks of material misstatement of user entities' financial statements.

MassMutual uses the subservice organizations identified in Section III to perform some of the services provided to user entities that are likely to be relevant to those user entities' internal control over financial reporting. The description includes only the control objectives and related controls of MassMutual and excludes the control objectives and related controls of the subservice organizations. The description also indicates that certain control objectives specified in the description can be achieved only if complementary subservice organization controls assumed in the design of our controls are suitably designed and operating effectively along with the related controls at MassMutual. The description does not extend to controls of the subservice organizations.

We confirm, to the best of our knowledge and belief, that:

- a) The description fairly presents the Defined Benefit and Defined Contribution Investment Service Operations System made available to user entities of the system during some or all of the period October 1, 2019 to September 30, 2020 for processing their transactions as it relates to controls that are likely to be relevant to user entities' internal control over financial reporting. The criteria we used in making this assertion were that the description
 - i. presents how the system made available to user entities of the system was designed and implemented to process relevant user entity transactions, including, if applicable,
 - (1) the types of services provided, including, as appropriate, the classes of transactions processed;
 - (2) the procedures, within both automated and manual systems, by which those services are provided, including, as appropriate, procedures by which transactions are initiated, authorized, recorded, processed, corrected as necessary, and transferred to the reports and other information prepared for user entities of the system;
 - (3) the information used in the performance of the procedures, including, if applicable, related accounting records, whether electronic or manual, and supporting information involved in initiating, authorizing, recording, processing, and reporting transactions; this includes the correction of incorrect information and how information is transferred to the reports and other information prepared for user entities;
 - (4) how the system captures and addresses significant events and conditions other than transactions;

- (5) the process used to prepare reports and other information for user entities;
 - (6) services performed by a subservice organization, if any, including whether the carve-out method or the inclusive method has been used in relation to them;
 - (7) the specified control objectives and controls designed to achieve those objectives, including, as applicable, complementary user entity controls and complementary subservice organization controls assumed in the design of the service organization's controls;
 - (8) other aspects of our control environment, risk assessment process, information and communications (including the related business processes), control activities and monitoring activities that are relevant to the services provided.
- ii. includes relevant details of changes to MassMutual's system during the period covered by the description.
 - iii. does not omit or distort information relevant to MassMutual's system, while acknowledging that the description is prepared to meet the common needs of a broad range of user entities of the system and their auditors, and may not, therefore, include every aspect of the Defined Benefit and Defined Contribution Investment Service Operations System that each individual user entity of the system and its auditor may consider important in its own particular environment.
- b) The controls related to the control objectives stated in the description were suitably designed and operating effectively throughout the period October 1, 2019 to September 30, 2020 to achieve those control objectives, if subservice organizations applied the complementary controls assumed in the design of MassMutual's controls throughout the period October 1, 2019 to September 30, 2020. The criteria we used in making this assertion were that:
- i. the risks that threaten the achievement of the control objectives stated in the description have been identified by management of MassMutual;
 - ii. the controls identified in the description would, if operating effectively, provide reasonable assurance that those risks would not prevent the control objectives stated in the description from being achieved; and
 - iii. the controls were consistently applied as designed, including whether manual controls were applied by individuals who have the appropriate competence and authority.

Massachusetts Mutual Life Insurance Company

Section III
Description of the Defined Benefit and Defined
Contribution Investment Service Operations
System

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Investment Service Operations System

Description of the Defined Benefit and Defined Contribution Investment Service Operations System

Scope of the Report

This document was prepared according to the American Institute of Certified Public Accountants standards and related interpretations.

Massachusetts Mutual Life Insurance Company (MassMutual or the Company) operates the Investment Services Operations system in support of the following defined contribution (DC) and defined benefit (DB) market segments:

- DB and DC Recordkeeping Systems using the Proprietary Recordkeeping System (PRS), Participant Accounting System (PAS), and Case Accounting System (CAS) systems,
- Tax Exempt Market DC Recordkeeping System using the FIS OMNIPlus (OMNI) system
- Mid-Size Corporate Market DC Recordkeeping System using the TRAC software-as-a-service (SaaS) system

This report was developed by MassMutual management to communicate information concerning Investment Service Operations services provided by MassMutual to clients of the above market segments supported on the DB and DC Recordkeeping systems. Therefore, it focuses on the significant business processes, systems and controls that MassMutual management have determined are likely to be relevant to user entities' internal control over financial reporting and does not cover all aspects of the services provided or procedures followed. The report addresses MassMutual's business process related control objectives for the Investment Service Operations system used by MassMutual applicable to DB and DC Recordkeeping Operations throughout the period October 1, 2019 to September 30, 2020.

The scope of this report focuses on recording price-related information such as net asset values and dividend rates received from vendors and other sources and trade share and unit reconciliations. Controls relating to trade execution, settlement and clearance activity are not included in the scope of this report. The controls included in this report should be considered in combination with the following separate SOC 1[®] Reports:

- Defined Benefit and Defined Contribution Recordkeeping Operations System SOC1[®] Report Applicable to the Proprietary Recordkeeping (PRS), Case Accounting (CAS) and Participant Accounting (PAS) Systems for the period October 1, 2019 through September 30, 2020
- Defined Contribution Recordkeeping Operations System SOC1[®] Report Applicable to the OMNI System for the period October 1, 2019 through September 30, 2020
- Defined Contribution Recordkeeping Operations System SOC1[®] Report Applicable to the TRAC System for the period October 1, 2019 through September 30, 2020
- Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System SOC 1[®] Report for the period October 1, 2019 through September 30, 2020

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Investment Service Operations System

Background

MassMutual is a provider of defined contribution, defined benefit, and nonqualified deferred compensation retirement products and services for corporate, union, Professional Employer Organizations (PEO), nonprofit and governmental customers across the United States. MassMutual offers a full range of products and services – from plan administration to customer communications – designed to simplify a complex business. Solutions are provided through retirement plan professionals, consultants, and third-party administrators. MassMutual has three primary service models:

- DC full service investment and recordkeeping for profit sharing, money purchase, 401(k), 457 governmental and 403(b) plans.
- DC investment and/or recordkeeping for 401(k) plans administered by Third-Party Administrators (TPA). Controls associated with the services provided by TPAs are not part of this SOC 1® Report.
- DB services for traditional plans and nontraditional plans such as cash balance plans and floor offset arrangements. The variety of services offered includes actuarial valuation, benefit calculation and payment, consulting services and Form 5500 preparation.

MassMutual's performance reflects a combination of more than 65 years of experience, investment management expertise, and innovative technology with personalized services. It offers a full range of products and services for corporate, union, nonprofit and governmental employers' defined benefit, defined contribution and nonqualified deferred compensation plans. It serves approximately 2.6 million participants. Communication with customers and participants is essential. Participants seek to better understand their retirement plans and capabilities, and plan sponsors and retirement professionals seek to be better informed about regulatory issues and ways they can help participants prepare for retirement. MassMutual is committed to developing and delivering results-driven communications that are designed to meet the needs of all of its customers.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution Recordkeeping
Investment Service Operations System

Complementary Subservice Organization Controls (CSOCs)

MassMutual's systems and the controls over Investment Service Operations system processing were designed with the assumption that certain control objectives can be achieved only if the CSOCs are implemented by the subservice organizations. The description includes only the controls and related control objectives of MassMutual and excludes the control objectives and related controls of the subservice organizations. The application of such internal controls by subservice organizations is necessary to achieve certain control objectives identified in this report. The subservice organization control considerations presented below should not be regarded as a comprehensive list of all of the controls that should be employed by the subservice organizations.

External Subservice Organization	Services Provided	Related Control Objectives	Complementary Subservice Organization Controls
SSC	State Street Corporation (SSC) is used for pricing calculations for portfolio investment accounts.	Control Objective 1, Pricing	State Street Corporation (SSC) should have controls in place to ensure that Unit Values are calculated accurately and transmitted to MassMutual completely, accurately and timely. Any discrepancies should be researched and resolved timely.
RTC	Reliance Trust (RTC) is used for pricing calculations for unitized plans' customized investments.	Control Objective 1, Pricing	Reliance Trust (RTC) should have controls in place to ensure unit values are accurately calculated for plan level unitized accounts which include, but not limited to, collective trusts and company stock prices. Additionally, RTC should have controls to ensure these prices transmitted to MassMutual completely, accurately, and timely. Any discrepancies should be researched and resolved timely.

All third party subservice organizations contracted by MassMutual undergo stringent review prior to acceptance. Additionally, MassMutual obtains SOC 1® reports as available from subservice organizations which are reviewed for control weaknesses that could potentially impact MassMutual's business processing and to identify any 'complementary user entity' controls identified by the subservice providers that MassMutual may need to address to help ensure the successful achievement of the subservice organization's control objectives.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Investment Service Operations System

Where SOC 1® or similar attestations are not available, or the SOC 1® provided does not cover the operations pertinent to MassMutual, MassMutual conducts appropriate periodic quality and due diligence procedures.

Enterprise Technology and Experience (ETX) organization provides the General Information Technology Controls (GITC) system in support of the IDT systems used to support MassMutual business operations. ETX should have controls over: documenting, authorizing, testing, approving and implementing application changes; documenting, authorizing, testing, approving and implementing system software changes; physical security and environmental protection of computer equipment and storage media; provisioning, termination, and recertification of user access based upon job responsibilities; the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule; and the completion and security of data transmissions, and identification and resolution of failures. While these GITCs are not addressed in this report, they may be found in the “Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System SOC 1® Report” for the period October 1, 2019 through September 30, 2020 which is available from MassMutual. All control objectives in this report rely on ETX as a subservice provider as the application controls within the business processes rely upon an effective GITC environment.

Subservice Organization General IT Controls: The business process control objectives listed in the subservice table are dependent on each subservice organization having appropriate controls over application change management and logical access, and if applicable physical security and environmental controls, job processing and data transmissions.

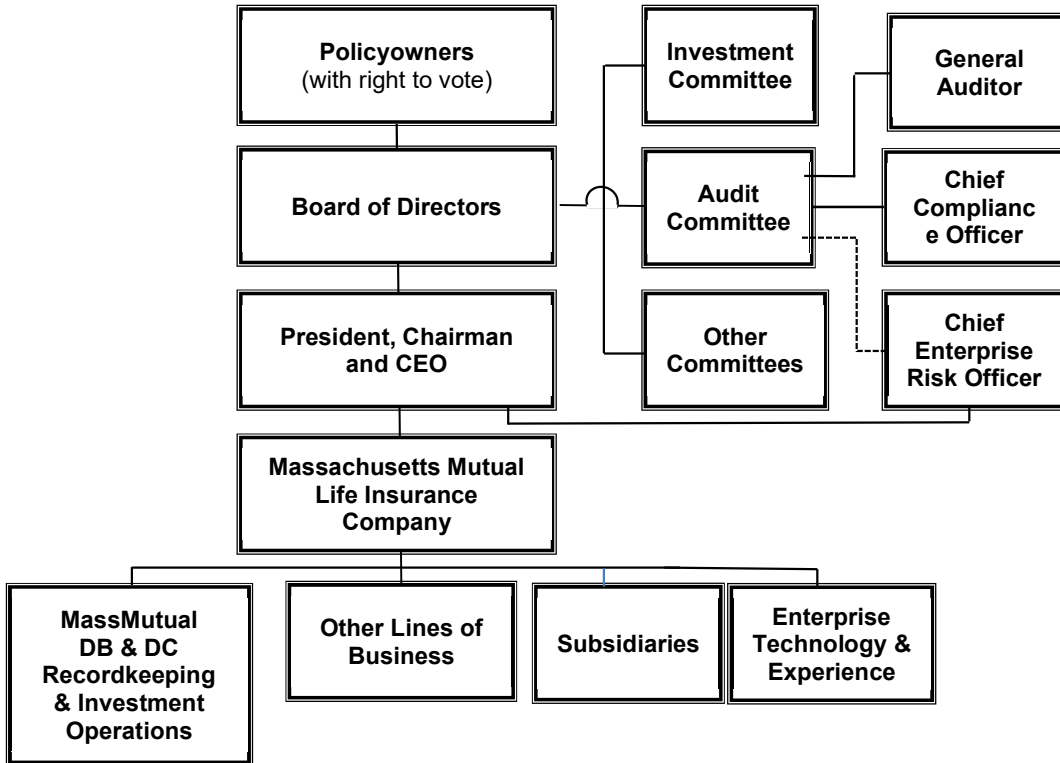
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

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Internal Control Elements

Control Environment

The following is an organization chart of the Company as of September 30, 2020:



The control environment reflects the tone of control consciousness set by an independent Board of Directors and the President/Chairman/Chief Executive Officer. It is the foundation of all other aspects of internal control. The Board of Directors provides oversight for MassMutual activities, including the Investment and Audit Committees of the Company. The Investment Committee exercises supervision and control of company investments and related financial matters, approves company investment policies and guidelines and reviews company investment strategies and investment performance. The Audit Committee is made aware of significant changes to the Company's policies and practices with respect to accounting, financial controls, and financial reporting, including those within MassMutual.

The Company has formal hiring practices that are designed to confirm that new associates are qualified for their job responsibilities. For each position, minimum education and experience requirements are identified and HR policy requires satisfactory completion of reference, drug, background and certain criminal checks.

Training of personnel is accomplished through supervised on-the-job training and external and internal training courses. An MassMutual employee Onboarding program has been established for new hires and tenured employees to provide a strong foundation for acquiring business knowledge through education. In addition, formal new hire curriculums are in place for key customer facing roles in the organization including the Participant Call Centers, Account Management, Recordkeeping, Relationship Management, New Business, Sales and Education Specialists. The new hire curriculums include standard formal training along

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with regular assessments. Training reports are also distributed available to managers to track employee progress towards development goals. Focus is also placed on protecting the investment in strategic portfolio initiatives by ensuring appropriate training and readiness of employees. It is MassMutual management's responsibility to determine that all MassMutual associates have received appropriate training.

Department managers also encourage training and development that continues to qualify personnel for their functional responsibilities.

The associate performance evaluation process is an ongoing performance review and part of the employee development process. All associates receive feedback on their overall responsibilities, including internal controls, on a regular basis or at least twice a year. Associates identify their specific performance and development goals designed to enhance their knowledge of and ability to best service the retirement plans. During the evaluation and feedback process, any areas requiring improvement are identified and associates are coached on the ways they can improve their performance and meet their development objectives.

MassMutual policies, procedures, and controls are subject to regular reviews by corporate governance, risk, and control functions. Corporate Audit, Compliance and Ethics, Enterprise Risk Management, Financial Reporting Risk, Corporate Law and Enterprise Information Risk Management functions are designed to evaluate compliance with Company policies in addition to governmental regulations that govern retirement service operations. Formal reports documenting the scope and results of reviews performed by the governance, risk and control functions are prepared and submitted to Company management as well as the Audit Committee of the Board of Directors as applicable.

A summary of the Company's policies and procedures is incorporated in its Code of Conduct (the Code). All associates must certify that they have read the Code and agree to follow the Company's Code of Conduct and the underlying policies and practices. The Company has a formal conflict-of-interest policy, which establishes rules of conduct for associates. Specifically, associates are prohibited from divulging confidential information regarding Plan Sponsor affairs, trading in securities of the Plan Sponsors or affiliates or taking any action that's in conflict with the best interests of the plan. In addition, associates (access persons) who have access to non-public information about securities holdings of our mutual funds and separate investment accounts (SIAs) must provide periodic brokerage statements to a compliance officer for review if they have an outside brokerage account.

Risk Assessment

MassMutual's Enterprise Risk Management group (ERM) has a dedicated business risk management function that collaborates with various corporate governance risk and control functions to regularly assess the risk that could impede MassMutual's ability to service DB and DC plans. The business risk management function works with MassMutual management to identify the services that meet the common needs of its user constituencies and to help assess the risks that result in the appropriate controls being put in place. Periodic risk management meetings are held to ensure that risk assessment is a continuous process throughout the year. In addition to the risk assessment performed by the business risk management function, ERM and other Corporate entities perform additional risk assessments that are intended to provide perspective on relevant MassMutual risks.

- Enterprise Information Risk Management and Third Party Risk Management facilitate regular risk assessments of subservice providers utilized by MassMutual.
- Financial Reporting Risk facilitates annual risk assessments which include the potential for fraud over operations that support the generation of MassMutual Financial Reporting.
- Corporate Audit performs regular risk assessments to select MassMutual operations to be audited.

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- Compliance and Ethics Department performs regular risk assessments to select MassMutual operations for business reviews.

The results of the risk assessments and any subsequent audits or reviews are communicated to MassMutual management and the business risk management function in ERM. ERM works with operations to help ensure actions identified and required to mitigate risk are taken.

In addition to the above and with respect to MassMutual management's SOC 1® assertion process, MassMutual management annually reviews the narrative description, the control objectives it has set, and the design of individual controls identified to help achieve those objectives. MassMutual operations have charted their risks and review existing process descriptions with departmental groups to help ensure that (a) new or changing risks are identified early, (b) the design of controls are still valid, and (c) staff are aware of their responsibilities with regards to ensuring the controls operate effectively. Upon completion of the review, the results of the assessments are compared with existing policies and if appropriate changes are made. This process also occurs during the year when business changes may dictate it.

Control Activities

MassMutual employs a number of control activities to help ensure DB and DC plans are administered in accordance with policies and procedures. A formal program is in place to help ensure its policies and procedures are complete, accurate and kept current. Changes to policies and procedures are reviewed and approved by management and communicated to associates via weekly newsletters, team meetings, web casts, or formal classroom training.

Controls are established to check for timeliness, accuracy, completeness and authorization as well as activities encompassing the physical and logical security of assets, records, and systems. In addition, the responsibilities of MassMutual and other support areas are allocated among personnel to segregate select processing and recording of transactions, investment trading, reconciliation activities, application development, and compliance and control monitoring.

Monitoring

MassMutual management utilizes a variety of reports and monitoring mechanisms to help ensure controls are in place and functioning as intended. Such reports include:

- Visual Boards displaying the status of pending transactions
- Suspense Account Reporting
- Quality Review Results Reporting
- Financial Account Reconciliations
- Daily Pricing Variances
- Deficiency and Incident Reporting
- System Batch Monitoring Reporting

Enterprise Risk Management and other corporate governance risk and control functions regularly review and assess business and information technology operations to determine whether reporting and monitoring mechanisms are utilized by MassMutual management. Issues are timely communicated to senior management and the board of directors as appropriate, and follow-up actions are taken as necessary.

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Corporate Audit Department (CAD)

Based on its periodic risk assessments of Company operations, CAD conducts internal audits of MassMutual business operations and systems. The results of the audits are presented to MassMutual management who are required to respond with action plans to remediate audit findings.

Information and Communication

MassMutual management consistently and regularly communicates the importance of following policies and procedures as well as the importance of complying with the rules and regulations that govern our operations. Management uses a variety of mechanisms to communicate this message including department meetings and compliance newsletters. Additionally, MassMutual Corporate Policies and Procedures help enforce the importance of open communication channels through Corporate Policies and Procedures Manuals such as the Code of Conduct. Associates are encouraged and empowered to identify and raise concerns and issues to management to facilitate appropriate and timely resolution. MassMutual employs a number of tools to facilitate open communication such as the MassMutual Compliance and Ethics Reporting Hotline. Additionally, the employee and manager performance evaluation program is designed to encourage open and regular communication and information sharing.

MassMutual also encourages and maintains two way communications with its Plan Sponsor and participant clients regarding the services that MassMutual provides including new and changed products, privacy and security concerns and satisfaction with services offered and scope and availability of related SOC reports.

Other Considerations

The Company is subject to regulation and supervision by the Division of Insurance of the Commonwealth of Massachusetts as well as other countries and states in which business is conducted. As such, the Company is required to file periodic reports with and is subject to periodic examination by, the Commonwealth of Massachusetts as well as other countries and states where business is conducted. The Company's most recent, completed examination by the Division of Insurance was for the year ended December 31, 2014; an examination for the year ended December 31, 2019 was initiated but not completed during the period. In addition, MassMutual is subject to regulation by the Department of Labor (DOL), the Internal Revenue Service (IRS), the Securities and Exchange Commission (SEC), and the Financial Industry Regulatory Authority (FINRA).

Changes in the Control Environment

As part of ongoing operations, MassMutual makes changes to its operations and various support group's roles and responsibilities to better align the business to service clients. No significant changes to the in-scope control environment were introduced during the period.

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Information Processing

Investment Service Operations System Overview

MassMutual's key business applications supporting the Investment Service Operations system applicable to Defined Contributions and Defined Benefit Recordkeeping Operations are hosted at the Company's Springfield, Massachusetts Data Center.

The following applications comprise the Investment Service Operations system platform.

Application	Description
FUNDLinx	FUNDLinx collects NAVs, unit values and portfolio investments for group annuity and direct mutual fund investments; receives distribution rates, NAVs, trades from the recordkeeping system and action items from the National Securities Clearing Corporation (NSCC); and transmits daily trades to the NSCC and to Mutual Fund companies. FUNDlinx is a third party software package that transmits daily trades to the National Securities Clearing Corporation (NSCC) and Mutual Fund companies for execution. FUNDLinx is operated in the Windows environment.
Consolidation and Routing System (CaRS)	Receives the group annuity and direct mutual fund activity data feed from PRS, CAS, and Unival, summarizes transactions to an omnibus (summary by fund) level and feeds transactions to FUNDlinx. CaRS is operated in an IBM AIX environment.
Fund Valuation System (Unival)	Unival collects and processes pricing related data including Net Asset Values (NAV) received from 3rd parties via electronic transmission, e-mail and fax and transmits prices to the recordkeeping systems (i.e. TRAC, OMNI, and CaRS for Reflex and CAS). Additionally, Unival collects and compares critical data from multiple application and supports investment product trading. Trades from DB and DC recordkeeping platforms (such as OMNI, TRAC, and SE2) are entered, posted and forwarded to FUNDLinx for aggregation and transmittal to MassMutual's counter-parties.
TreX	Workflow system based on Security Settings that stores documents with the ability to perform numerous acts including but not limited to Searching, Viewing, and Adding, Content as well as managing and presenting multiple key business workflow solutions.

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Description of Operations

Background

Investment Options

The Company offers a selection of investment options to satisfy various investment objectives. Investment elections are established during plan installation as directed by the Plan Sponsor and/or participants.

During the period from October 1, 2019 through September 30, 2020, the available investment options were classified as follows:

- Separate and Pooled SIAs with various objectives and strategies
- Direct Mutual Fund, outside funds, Common Collective Investment Trusts (CIT)
- Self-Directed Brokerage Accounts

MMRS offers both registered products and group annuity contracts. With group annuity investments, plans purchase units of SIAs, which in turn purchase shares of the corresponding mutual funds or other similar investments. With registered product investments, plans invest directly in mutual funds or other similar investments. Mutual funds are registered investment companies with the Securities and Exchange Commission and, accordingly, are subject to annual audits of their financial statements by an independent auditor. Such funds are open-end, diversified investment management companies with corresponding risks and objectives. Mutual fund prospectuses and supplements are sent to all Plan Sponsors upon initial allocation of monies and certain other business events, including annual updates.

Participants in DC registered product investments also receive mutual fund prospectuses upon initial allocation of monies, but do not receive supplements or annual updates thereafter. Participants in group annuity investments receive investment profiles or “fund fact sheets” in lieu of prospectuses. CITs are not mutual funds. Units of a CIT are securities that are exempt from registration. Management of the trust is subject to fiduciary duty and prohibited transaction rules. Prospectuses are not required for CITs.

The transaction processing, trustee services and other administrative services for the separate and portfolio SIAs is performed by State Street Corporation (SSC) and includes, but is not limited to, asset custody and control, asset valuation, income accrual and collections, corporate actions, securities lending and transfer agent. SSC values the SIAs on a daily basis through a unit value calculation. SSC is not included in the scope of this report.

The MassMutual Select Funds (MMSF) are subadvised by asset managers unaffiliated with MassMutual, including well-known institutional and retail managers as well as specialized investment boutiques. MMSF include the MassMutual RetireSMARTSM Funds target-date series, and the MassMutual RetireSMARTSM Funds risk-based series, both of which invest in MMSF, MassMutual Premier Funds, and/or Invesco.

The MassMutual Premier Funds (MMPF) are subadvised by asset managers affiliated with MassMutual and currently include Barings and Invesco. For both MMSF and MMPF, MassMutual serves as the investment adviser and the subadvisers handle the day-to-day portfolio management for each fund.

Annual and Semi-Annual reports of the MMSF and MMPF, including portfolios of investments are sent to Plan Sponsors. Interest income is recorded on an accrual basis, discounts are accreted, and premiums are amortized using the scientific method. Dividend income is recorded on the ex-dividend date. The interest and dividend income is recorded in receivable accounts until the cash is received.

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Additionally, plans may invest in SIAs that invest in various other investments managed by certain affiliated and unaffiliated advisors. These investments include public and private stock funds, mutual funds, common collective trusts, real estate investment trusts, separate accounts, asset allocation funds, and individually managed accounts. The transaction processing and other administrative services for these investments are performed by the respective fund management company.

For DC customers that hold direct investments in mutual funds and/or CITs, mutual fund and CIT transactions are processed by a custodian through the National Securities Clearing Corporation (NSCC). Direct mutual fund and/or CIT investments are managed by a wide variety of asset managers from across the industry.

MMRS also has an alliance in place with Schwab, a registered broker-dealer and a member of the FINRA and the Securities Investor Protection Corporation (SIPC). Schwab is a provider of brokerage services to retirement plans and is also the broker for many of the country's mutual funds and corporate investors. Schwab provides Self-Directed Brokerage Account (SDBA) services to MMRS plans with assets over \$1 million. The SDBA provides participants additional investment flexibility by giving them access to over 6,500 mutual funds managed by more than 300 fund families, as well as individual stock and bond investments. Schwab provides investors in the SDBA with mutual fund prospectuses, quotes, and daily account trading.

Investors also receive a written confirmation of each trade, monthly activity statements (for active accounts) or quarterly statements (for inactive accounts). Schwab trades can be made via telephone or through the Internet using Schwab's "PCRA On-Line Trading" application. After receiving an application from MMRS, participants set up their accounts through Schwab.

Defined Contributions – Investment Only products (DC-IO) are products in which MassMutual manages the investments but does not provide the recordkeeping at the participant level. State Street Bank in Kansas City provides the fund accounting. Trades are transmitted either via FAX/e-mail or through the NSCC. State Street Bank in Boston acts as the Custodian for these funds.

Stable value investment products – With the exception of Stable Return (Wells/Galliard) – MM affiliate, Barings, provides asset management oversight for stable value investment products. Descriptions of these products are available in documents pertaining to the individual stable value products, all of which are included in an annual 5500 package submitted to participants.

Pricing

SIAs and direct investments in mutual funds and/or CITs are valued on a daily basis. MMRS receives daily distribution rates, mutual fund NAVs, and in some cases the related change from the prior day rate or NAV from the SSC, NSCC, Vertical Management Services (VMS), and other mutual fund management companies. Valuation procedures are performed once the mutual fund prices (NAV's and distribution rates) are received. All newly onboarded DB full service plans are handled by Matrix Trust Company.

Pooled SIAs are valued on the Unival system within MassMutual. The valuation of the asset allocation SIAs on Unival is based on the value of the mutual fund shares held in the separate account and are divided by the units held to calculate a unit value price. The valuation of the non-asset allocation SIA's on Unival use the Net Investment Factor (NIF) formula. Plans and participants own units of the SIA.

Prior to calculating daily unit values for pooled SIAs, Unival performs edit checks of underlying tables within the Unival application to the previous day's tables and reports and resolves all unanticipated changes. Investment operations associates review the reported changes and investigate any unanticipated changes. Unival receives daily distribution rates, mutual fund NAVs, and in some cases the related change from the prior day's rate or NAV from the RTC, SSC, NSCC, VMS and other mutual fund management companies. Unival also provides the ability to enter valuation information manually. Unival requires entry of the current day NAV and the change from the prior day, as well as the current day dividend rate and the change from the prior day dividend rate, before transmitting unit values to CaRS.

*MassMutual Defined Benefit and Defined
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System*

*Description of the System Provided by
MassMutual*

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During the entry, Unival generates online error messages and requires entry of the current day NAV if the prior day rate/price plus the change entered does not equal the current day rate/price.

Before transmitting the daily unit values to CaRS, an independent review of the data entry process compares for accuracy the current day NAV, accrual, and distribution information entered into the system with the NAV and unit values obtained from fund companies is performed by investment operations associates. In addition, an investment operations associate reviews an additional dividend reconciliation report- "Valuation Dividend Verification" for exceptions. The reported changes are reviewed, and any unanticipated changes are investigated. Daily, investment operations associates also compare fluctuations in the current day NAVs received from the various fund companies to fluctuations in the current day unit values for reasonableness. Discrepancies are researched and a resolution documented prior to transmitting daily unit values to CaRS. NAVs are benchmarked to similar market funds, any discrepancies that fall outside a 1.5% threshold are investigated before transmitting NAVs and unit values to CaRS. The template for NAV's accruals and dividends is reviewed prior to upload to Unival. System parameters do not allow the transmission of unit values to CaRS until all NAVs are entered.

Fundlinx is reviewed by investment operations associates to determine that all NAVs and distribution rates have been received. Any missing NAVs and distribution rates are entered as appropriate.

For the direct mutual fund business, during import of prices to Unival, an automated comparison is made to price data already in the system. If a conflict with the price data exists, the item is flagged on the Conflict Report for investment operations associates to indicate which price should be used. Prices are checked by the investment operations associate to other sources such as Fund Company price Sheets (if available) or website sources to determine which price should be kept.

For plans that invest directly in mutual funds or CITs, the prices are fed to the Unival system without any MMRS calculations performed. The plans and participants own mutual fund shares or CIT units.

Separate SIAs are portfolio accounts that hold a pool of various investments. The investments are valued by SSC and are received by MMRS on a daily basis via a CaRS data feed.

Some plans offer investments that are not available through other MMRS investment options. These investments are set up and administered on a plan level. The investment types vary by plan (e.g. stocks, privately managed, asset allocation models, etc.) and are valued by the custodian (RTC) on a daily basis. Valuation processing is specific to the fund objectives set during fund set up and are received by MMRS via a CaRS data feed on a daily basis.

Investment Related Data Reconciliation

For group annuity trades investment operations associates compare Fundlinx Dollar Trades to Cashbook and Unival daily to determine that the total dollar values of the trades match. Cashbook is a process and not a system. It is used to reconcile and balance cash including trades to the administrative systems and to consolidate all cash transactions for the Business, grouping them for trading and accounting purposes. For Registered Product direct mutual fund trades, Fundlinx dollar trades are compared to Cashbook and Unival to determine that the total dollar values of the trades match. Outstanding share balances are reconciled between Unival, external custodian records, and Fundlinx daily to confirm the reinvestment of dividends is recorded accurately and completely. For Direct Mutual Fund business, an Investment operations associate reconciles outstanding share balances between the RK, Fundlinx, and the Fund Company daily to confirm shares or the reinvestment of dividends is recorded accurately and completely. Daily, verification is performed by investment operations associates to confirm that units are reconciled between the administrative recordkeeping systems (PRS, CAS, TRAC OMNI and SE2), via the CaRS system, and Unival as noted on the "Unival Units Reconciliation Exception" report. Discrepancies are researched and resolved. A senior team member verifies the review and signs-off on the "Units Recon Checklist."

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Control Objectives, Related Controls, and Tests of Operating Effectiveness

MassMutual has specified its control objectives and identified the controls to achieve these objectives. These objectives have been determined by management of the Company by reference to, among other information sources, the AICPA Audit and Accounting Guide for Employee Benefit Plans.

MassMutual control objectives and related controls are included in Section IV of this report "MassMutual's Control Objectives and Related Controls, and KPMG LLP's Tests Of Controls And Results of Tests of Operating Effectiveness" and are an integral part of MassMutual's system description.

The Service Auditor has determined the nature, timing, and extent of testing to be performed. Further information on the nature, timing, and extent of testing and results of testing is contained in Section IV.

Section IV
MassMutual's Control Objectives and Related Controls, and KPMG LLP's Tests of Controls and Results of Tests of Operating Effectiveness

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Completeness and Accuracy of Information

Testing the accuracy and completeness of information provided by Massachusetts Mutual is also a component of the testing procedures performed. Information utilized as evidence may include, but is not limited to:

- Standard “out of the box” reports as configured within the system.
- Parameter driven reports generated by in-scope applications and databases.
- Custom developed reports that are not standard to the application such as scripts, report writers and queries.
- Spreadsheets that include relevant information utilized for the performance of testing a control.
- Massachusetts Mutual’s prepared analyses, schedules, or other evidence manually prepared and utilized by the Company.

While these procedures are not specifically described in the “KPMG Tests of Operating Effectiveness”, KPMG evaluated whether the information provided by Massachusetts Mutual was sufficiently reliable for our purposes, including, as necessary, obtaining evidence about the completeness and accuracy of the information and evaluating whether the information was sufficiently precise and detailed for our purposes.

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Pricing

Control Objective 1
Controls provide reasonable assurance that pricing related information is recorded completely and accurately.

Controls Specified by MassMutual Investment Operations	Testing Performed by KPMG LLP and Results of Tests
<p>1.1 Prior to calculating daily unit values, Unival performs edit checks of underlying tables within the application to the previous day's tables and reports. Investment operations associates review the reported changes as evidenced on the Table Compare report and resolve any unanticipated changes. The review is evidenced by documentation uploaded into the Set Valuation Date Task and management approval of the Prepare for Nightly Pricing- Monitor Task in TreX. (DB & DC)</p>	<p>Inspected the "Prepare for Nightly Pricing- Monitor" and the "Set Valuation Date" Tasks in TreX and the "Table Compare" report for a selection of dates and determined that investment operations associates reviewed the reported changes and when applicable resolved any unanticipated changes.</p> <p>Observed an investment operations associate change the description of a fund and calculate the daily unit values using Unival and determined that Unival generated an error message indicating that table changes required investigation.</p> <p>No Exceptions Noted.</p>
<p>1.2 During the import of prices, an automated comparison is made to price data already in the Unival system. If a conflict with the price data exists, the item is flagged on the Conflict Report for investment operations associates to indicate which price should be used. Investment operations associates check the prices to other sources such as Fund Company price sheets (if available) or website sources to determine which price should be kept. Backup data is retained as evidence of the price decision. A review of the decision is conducted by an independent team member. The review is evidenced by documentation uploaded into the Conflict Report Task and the subsequent Quality Review notes in the QC step of the Analysis After Prices Received- Reviewer in TreX. (DB & DC)</p>	<p>For a selection of records from the import files with different prices determined that the automated comparison accurately flagged the difference on the report. For a selection of records from the import files with same prices determined that the automated comparison did not flag the difference on the report.</p> <p>Inspected the "Conflict Report" and the "Final Analysis Reviewer" Tasks in TreX and the "Unival Conflict" report for a selection of dates and determined that an investment operation associate reviewed and followed up on conflicting prices and that an independent team member reviewed the decisions taken.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Investment Operations	Testing Performed by KPMG LLP and Results of Tests
1.3 Unival requires investment operations associates to enter the current day NAV and the change from the prior day and if applicable the current day dividend rate and the change from the prior day dividend rate, before transmitting unit values to CaRS. (DB & DC)	Observed an investment operations associate enter incorrect and blank NAV data and dividend rates into the Unival NAV entry screen and noted that online error messages were generated requiring corrected data to be entered into Unival. Observed an investment operations associate enter complete and accurate NAV data and dividend rates into the Unival NAV entry screen and noted the system allowed for further processing. No Exceptions Noted.
1.4 Unival generates online error messages and requires investment operations associates to re-enter the current day NAV if the prior day rate/price plus the change entered does not equal the current day rate/price. (DB & DC)	Observed an investment operations associate enter an inappropriate rate/price into the Unival NAV entry and noted that online error messages were generated requiring the re-entry of the NAV if the prior day rate/price plus the change entered did not equal the current day rate/price. Observed an investment operations associate enter the appropriate rate/prices into the Unival NAV entry to determine that the current day rate/price were entered completely and accurately into Unival and the system allowed for further processing. No Exceptions Noted.
1.5 Investment operations associates review a nightly dividend reconciliation report for exceptions. Any unanticipated changes are researched and resolved. The review is evidenced by documentation uploaded into the Dividends Report task and management approval of the Analysis After Prices Received- Analyzer Task in TreX. (DB & DC)	Inspected the "Dividend Report" and the "Final Analysis Analyzer" Tasks in TreX and the "Valuation Dividend Verification" report for a selection of dates and determined that an investment operation associate independent of the data entry process performed a review and documented research and resolution of any discrepancies. No Exceptions Noted.

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Controls Specified by MassMutual Investment Operations	Testing Performed by KPMG LLP and Results of Tests
<p>1.6 Investment operations associates compare fluctuations in the current day NAVs received from the various fund companies to fluctuations in the current day unit values in Unival for reasonableness. Any unanticipated changes are researched and resolved before transmitting daily unit values to CaRS. The review is evidenced by documentation uploaded into the Percent Change Reports tab and management approval of the Analysis After Prices Received- Monitor task in TreX. (DB & DC)</p>	<p>Inspected the "Percent Change Report" and "Analysis After Prices Received- Monitor" tasks in TreX and the "Percent Change Report" for a selection of dates and determined that investment operations associates compared fluctuations in the current day NAVs received from the various fund companies to fluctuations in the current day unit values in Unival for reasonableness and that discrepancies were researched and the resolution documented.</p> <p>No Exceptions Noted.</p>
<p>1.7 NAVs are benchmarked to similar market funds using the "Benchmark Exception Report." Investment operations associates review the reported exceptions and obtains backup, for the funds that fall outside a 1.5 % threshold prior to transmitting the NAVs and unit values to CaRS. The review is evidenced by documentation uploaded into the Benchmark Exception Reports Task and management approval of the Analysis After Prices Received-Analyzer Task in TreX. (DB & DC)</p>	<p>Inspected the configuration of the Unival reporting queries and determined that Unival was configured to identify values that exceed a 1.5 % difference in the "Percent Change" of the "Benchmark Exception Report." In addition, traced a record from the report and tied out key attributes to the Unival database and tied the total row count from the Unival database to the report and determined the report was complete and accurate.</p> <p>Inspected the "Benchmark Exception Report" and "Analysis After Prices Received-Analyzer" tasks in TreX and the "Benchmark Exception Report" for a selection of dates and determined that an investment operations associate investigated any discrepancies that fell outside the 1.5% threshold prior to transmitting the values to CaRS.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Investment Operations	Testing Performed by KPMG LLP and Results of Tests
<p>1.8 NAV's, accruals, and dividends can be uploaded to Unival using a NAVIMPORTALL template. This template is populated with current day valuation information. The template is created, and backup is obtained by investment operations associates. The template is then quality reviewed by an independent team member for completion prior to upload into Unival. The review is evidenced by documentation uploaded into the NAVIMPORTALL Task and the subsequent Quality Review notes in the QC step of the NAVIMPORTALL Task in TreX. (DB & DC)</p>	<p>Inspected the "NAVIMPORTALLS QC" and the "Analysis During the Day - Reviewer" Tasks in TreX for a selection of dates and determined that an investment operations associate uploaded the NAVIMPORTALL report and determined that a subsequent quality review was performed.</p> <p>No Exceptions Noted.</p>
<p>1.9 Investment operations associates review the "FUNDLinx Unpriced Cusip" report from the FUNDLinx system to determine that all NAVs and distribution rates have been received. Any missing NAVs and distribution rates are entered as appropriate. The review is evidenced by documentation of a blank "Unpriced Cusip" Report uploaded into the Fundlinx Unpriced CUSIPS report Task and management approval of the Price File and Trades Send- Monitor Task in TreX. (DB & DC)</p>	<p>Inspected the "Fundlinx Unpriced Cusip Report" and "Price File and Trade Send - Monitor" tasks in TreX and the "Unpriced Cusip Report" for a selection of dates and determined that all NAVs and distribution rates were received, if any NAVs and distribution rates were missing determined that the rates were entered accurately.</p> <p>No Exceptions Noted.</p>
<p>1.10 Unival system parameters do not allow the transmission of unit values to CaRS until all NAVs are entered. (DB & DC)</p>	<p>Observed an investment operations associate attempt to transmit unit values to CaRS in the Unival system and noted that Unival prevented the transmission of unit values to CaRS until all NAVs had been entered.</p> <p>No Exceptions Noted.</p>
<p>Note: Asset Valuation is a daily process. Job Processing controls that monitor schedules and job abends (As noted in the General Information Technology Controls System SOC 1® Report Controls 5.1 and 5.2) help ensure that process delays are identified immediately so that prompt action can be taken to resolve problems quickly.</p>	

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution Recordkeeping
Investment Service Operations System

Investment Related Data Reconciliation

Control Objective 2
Controls provide reasonable assurance that investment related data is reconciled completely and accurately.

Controls Specified by MassMutual Investment Operations	Testing Performed by KPMG LLP and Results of Tests
<p>2.1 For group annuity trades, investment operations associates compare FUNDlinx Dollar Trades to Cashbook and Unival daily to determine the total dollar values of the trades match. Discrepancies are researched and resolved in a timely manner. The review is evidenced by documentation uploaded into the Group Annuity Trader Role Task in TreX and are considered electronically reviewed with the wire approval email, the QC Review, and the "Group Annuity Trader NSCC - Trading" Task in TreX. (DC & DB)</p>	<p>Inspected the "Group Annuity Trader NSCC - Trading" Task in TreX and the reconciliation for a selection of dates and determined that an investment operations associate compared FUNDlinx Dollar Trades to Cashbook and Unival daily to determine that the total dollar values of the trades matched and if discrepancies existed they were researched and resolved.</p> <p>No Exceptions Noted.</p>

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution Recordkeeping
Investment Service Operations System

Controls Specified by MassMutual Investment Operations	Testing Performed by KPMG LLP and Results of Tests
<p>2.2 For registered product and direct mutual fund trades, investment operations associates compare FUNDlinx dollar trades to Cashbook (Reflex) and Unival (RPG) to determine the total dollar values of the trades match. Discrepancies are researched and resolved in a timely manner. The review is evidenced by documentation uploaded into the Registered Trader Role Task in TreX and are considered electronically reviewed with the wire approval email, the QC Review and the “Registered Trader - RP Trading Status” Task in TreX. (DC – registered product)</p>	<p>Inspected the “Registered Trader - RP Trading Status” task in TreX and the reconciliation for a selection of dates and determined that an investment operations associate compared FUNDlinx dollar trades to Cashbook and Unival to determine that the total dollar values of the trades matched and researched and documented the resolution of any discrepancies.</p> <p>No Exceptions Noted.</p>
<p>2.3 Investment operations associates reconcile outstanding share balances between Unival, external custodian records, and Fundlinx daily to confirm the reinvestment of dividends is recorded accurately and completely. A senior level team member reviews completion of the reconciliation and signs-off. The reviews are evidenced by the documentation uploaded into the Group Annuity share reconciliation in TreX and are considered electronically reviewed with the completion of the “Group Annuity Share Recon” Task in TreX. (DB & DC)</p>	<p>Inspected the “Group Annuity Share Recon” task in TreX and the reconciliation for a selection of dates and determined that an investment operations associates reconciled outstanding share balances between Unival records, external custodian records, and FUNDlinx daily to confirm that the reinvestment of dividends was recorded accurately and completely and researched and resolved any discrepancies identified.</p> <p>No Exceptions Noted.</p>

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution Recordkeeping
Investment Service Operations System

Controls Specified by MassMutual Investment Operations	Testing Performed by KPMG LLP and Results of Tests
<p>2.4 For Direct Mutual Fund business, an Investment operations associate reconciles outstanding share balances between the administrative recordkeeping systems, Fundlinx, and the Fund Company daily to confirm shares or the reinvestment of dividends is recorded accurately and completely. A senior level team member reviews completion of the reconciliation and signs-off on the reconciliations. The reviews are evidenced by the documentation uploaded into Trex under the RPG Share reconciliations and are considered electronically reviewed with the completion of the "RPG Share Recon" Task in TreX. (DB & DC)</p>	<p>Inspected the "RPG Share Recon" task in TreX and the reconciliation for a selection of dates and determined that an investment operations associates reconciled outstanding share balances between the RK, Fundlinx, and the Fund Company daily to confirm shares or the reinvestment of dividends were recorded accurately and completely and researched and resolved any discrepancies identified.</p> <p>No Exceptions Noted.</p>
<p>2.5 Investment operations associates verify on a daily basis that units are reconciled between the administrative recordkeeping systems (PRS and CAS) via CaRS, and Unival and makes note on the "Unival Units Reconciliation Exception" report. Discrepancies are researched and resolved. A senior level team member verifies the review and signs-off. The reviews are evidenced by documentation uploaded into the Retirement Plans Group (RPG) unit reconciliation task in TreX and are considered electronically reviewed with the completion of the "USIG and RI Unival Unit Recons" Task in TreX. (DB & DC)</p>	<p>Inspected the "USIG and RI Unival Unit Recons" task in TreX and the reconciliation for a selection of dates and determined that an investment operations associate verified that units were reconciled between the administrative recordkeeping systems (PRS and CAS) via CaRS, and Unival as noted on the report and researched and resolved any discrepancies identified.</p> <p>No Exceptions Noted.</p>

Section V
Other Information Provided by MassMutual

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Investment Service Operations System

Business Continuity Planning

MassMutual's recovery strategy is focused on diversification. Data Center recovery utilizes capabilities in other states, currently Colorado, intended to protect against the impact from regional disasters and multiple replication/backup technologies are used to protect against hardware failure. Workspace recovery is available within multiple MassMutual-owned buildings in Massachusetts and Connecticut, many of which have generator backup and diverse paths for network and utilities.

The primary Data Center in Massachusetts has been outfitted with an uninterruptible power supply (UPS) and N+1 generation capacity. Should there be a larger issue, systems are backed up to MassMutual-owned hardware in Colorado (1700 miles away). MassMutual's home office in Springfield has also been backed up with generators; capable of powering around 3,700 workstations, more than we believe would be needed for the first 30 days of a recovery event. If workspace becomes unavailable in the MassMutual home office in Springfield or the office in Enfield, Connecticut, employees may be relocated to the office not impacted or may work remotely. MassMutual has established critical operations and workspace outside of its home office region in Boston, New York, and Phoenix.

MassMutual maintains a continuity planning program that is intended to address, among other things, facility/systems failure due to cyber threats, pandemics and third party outages. MassMutual's business continuity program was born out of Business Impact Analysis (BIA) results. MassMutual has opted to keep BIA results live within the body of the business continuity plan, requiring that information to be reviewed at least semi-annually and as there are changes within the business line. Company policy states that all business functions must be covered by a business continuity plan that is maintained in the Company's web-based planning tool.

MassMutual maintains three types of technical continuity plans: Application, Infrastructure and Processor. Recovery Time Objectives and Recovery Point Objectives are governed by business continuity plan priorities. Essential applications are generally replicated using near-real-time replication to Colorado, while non-essential applications are backed up using virtual tape backup to Colorado. Essential applications are generally restored in less than 24 hours. By policy, all technology in the Data Center must be covered by the appropriate technical continuity plan in the Company's web-based planning tool.

Emergency response testing is done throughout the year and includes Crisis Management Team simulations, evacuation drills and exercising of specialized plans, such as Pandemic Response, Customer Disaster Response, Aircraft Incident and others. Information Technology disaster recovery testing is conducted on an annual basis and includes essential applications and a rotation of non-essential applications. Finally, business continuity testing is conducted throughout the year and includes annual testing through an online simulator, division-level simulations, tabletop walkthroughs and participation in the annual IT disaster recovery test. In addition to planned testing, internal auditors have an active role in auditing continuity plans and test results across the Company. When potential issues are identified, such issues are documented, assigned an owner and tracked through to completion. Plan maintenance is handled through regularly scheduled reviews. Continuity plans and the hardware/application inventory in the Company's Configuration Management Database are validated annually. Finally, ongoing reviews are conducted throughout the year to ensure all processes and technology items are covered by continuity plans and to ensure they meet the Company's Guiding Principles framework within the company policy for recovery prioritization.

Technical Support Teams provide support for continuity of critical business operations 24x7x365.

MassMutual's Office of Enterprise Resilience annually reviews the Business Continuity and Disaster Recovery plans for critical third parties.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Investment Service Operations System

Pandemic Planning at MassMutual and impact of COVID-19

MassMutual has maintained a Pandemic Response Plan for over 15 years. The plan is organized in three phases: Monitoring, Partial Activation and Full Activation and utilizes specific trigger events to direct the actions that will be put in place for each phase. Because MassMutual is a global firm, the plan does allow for different operating locations to be in different phases depending on what is happening in a given region. This plan was utilized in the current COVID-19 crisis and directed the actions as the event evolved in the US and around the world.

MassMutual has been able to effectively respond to the challenges caused by COVID-19. Over 98% of the workforce was transitioned to work-from-home beginning in March 2020, before any known cases were identified in the workforce. Collaboration tools, largely electronic workflows, and a robust IT infrastructure have helped to ensure the workforce remains productive and able to process transactions. In Q1 and Q2 2020, MassMutual responded to the requirements of the CARES act passed by congress and modified systems and processes, where appropriate, to meet customer needs. MassMutual continues to closely monitor the situation and is prepared to adjust as the pandemic evolves. Despite the devastation caused by this terrible disease globally, MassMutual continues to operate from a position of strength and has been able to maintain effective controls across all lines of business.

COVID-19 Impact on Internal Controls

The coronavirus pandemic (COVID-19) has had minimal impact on control activities within the scope for this report. In addition, the pandemic has had little impact on the services we provide our members and employers. The majority of services can be conducted remotely, and that has allowed us to safeguard the health and well-being of our staff, our members and our participating employers. Despite the disruption COVID-19 has caused to the economy, we have continued to distribute benefit payments on time, process retirement and withdrawal applications, and maintain our technological infrastructure with no lapse in service. MassMutual continues to monitor internal controls, including controls that have been temporarily adjusted during the pandemic, to ensure they are operating effectively.





**Defined Benefit and Defined Contribution
Recordkeeping Operations System**

System and Organization Controls (SOC 1[®]) Report

**Applicable to Proprietary Recordkeeping (PRS), Case
Accounting (CAS), and Participant Accounting (PAS) Systems
for the Period October 1, 2019 through September 30, 2020**

System and Organization Controls (SOC 1[®]) Report is a registered service mark of the AICPA

**Massachusetts Mutual Life Insurance Company
Defined Benefit and Defined Contribution
Recordkeeping Operations System**

System and Organization Controls (SOC 1®) Report

Applicable to Proprietary Recordkeeping (PRS), Case Accounting (CAS), and Participant Accounting (PAS) Systems for the Period October 1, 2019 through September 30, 2020

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Section I
Independent Service Auditor's Report provided by
KPMG LLP



KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Service Auditor's Report

To the Management of Massachusetts Mutual Life Insurance Company

Scope

We have examined Massachusetts Mutual Life Insurance Company's (MassMutual or the Company) Defined Benefit and Defined Contribution Recordkeeping Operations description of its system entitled "Description of the Defined Benefit and Defined Contribution Recordkeeping Operations System" for processing user entities' transactions throughout the period October 1, 2019 to September 30, 2020 (the description) and the suitability of the design and operating effectiveness of the controls included in the description to achieve the related control objectives stated in the description, based on the criteria identified in MassMutual's Assertion (the assertion). The controls and control objectives included in the description are those that management of MassMutual believes are likely to be relevant to user entities' internal control over financial reporting, and the description does not include those aspects of the Defined Benefit and Defined Contribution Recordkeeping Operations System that are not likely to be relevant to user entities' internal control over financial reporting.

The information included in Section V, "Other Information Provided by MassMutual", is presented by management of MassMutual to provide additional information and is not a part of MassMutual's description of its Defined Benefit and Defined Contribution Recordkeeping Operations System made available to user entities during the period October 1, 2019 to September 30, 2020. Information about MassMutual's business continuity planning and the impact of COVID-19 has not been subjected to the procedures applied in the examination of the description of the Defined Benefit and Defined Contribution Recordkeeping Operations System and of the suitability of the design and operating effectiveness of controls to achieve the related control objectives stated in the description of the Defined Benefit and Defined Contribution Recordkeeping Operations System and, accordingly, we express no opinion upon it.

MassMutual uses subservice organizations identified in Section III to perform some of the services provided to user entities that are likely to be relevant to those user entities' internal control over financial reporting. The description includes only the control objectives and related controls of MassMutual and excludes the control objectives and related controls of the subservice organizations. The description also indicates that certain control objectives specified by MassMutual can be achieved only if complementary subservice organization controls assumed in the design of MassMutual's controls are suitably designed and operating effectively, along with the related controls at MassMutual. Our examination did not extend to controls of the subservice organizations and we have not evaluated the suitability of the design or operating effectiveness of such complementary subservice organization controls.

The description indicates that certain control objectives specified in the description can be achieved only if complementary user entity controls assumed in the design of MassMutual's controls are suitably designed and operating effectively, along with related controls at MassMutual. Our examination did not extend to such complementary user entity controls, and we have not evaluated the suitability of the design or operating effectiveness of such complementary user entity controls.

Service Organizations' Responsibilities

In Section II, MassMutual has provided an assertion about the fairness of the presentation of the description and suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description. MassMutual is responsible for preparing the description and its assertion, including



the completeness, accuracy, and method of presentation of the description and assertion, providing the services covered by the description, specifying the control objectives and stating them in the description, identifying the risks that threaten the achievement of the control objectives, selecting the criteria stated in the assertion, and designing, implementing, and documenting controls that are suitably designed and operating effectively to achieve the related control objectives stated in the description.

Service Auditor's Responsibilities

Our responsibility is to express an opinion on the fairness of the presentation of the description and on the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of CPAs. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether, in all material respects, based on the criteria in management's assertion, the description is fairly presented and the controls were suitably designed and operating effectively to achieve the related control objectives stated in the description throughout the period October 1, 2019 to September 30, 2020. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

An examination of a description of a service organization's system and the suitability of the design and operating effectiveness of controls involves:

- performing procedures to obtain evidence about the fairness of the presentation of the description and the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on the criteria in management's assertion,
- assessing the risks that the description is not fairly presented and that the controls were not suitably designed or operating effectively to achieve the related control objectives stated in the description,
- testing the operating effectiveness of those controls that management considers necessary to provide reasonable assurance that the related control objectives stated in the description were achieved,
- evaluating the overall presentation of the description, suitability of the control objectives stated in the description, and suitability of the criteria specified by the service organization in its assertion.

Inherent Limitations

The description is prepared to meet the common needs of a broad range of user entities and their auditors who audit and report on user entities' financial statements and may not, therefore, include every aspect of the system that each individual user entity may consider important in its own particular environment. Because of their nature, controls at a service organization may not prevent, or detect and correct, all misstatements in processing or reporting transactions. Also, the projection to the future of any evaluation of the fairness of the presentation of the description, or conclusions about the suitability of the design or operating effectiveness of the controls to achieve the related control objectives stated in the description is subject to the risk that controls at a service organization may become ineffective.

Description of Tests of Controls

The specific controls tested and the nature, timing, and results of those tests are listed in Section IV.



Opinion

In our opinion, in all material respects, based on the criteria described in MassMutual's assertion:

- a. the description fairly presents the Defined Benefit and Defined Contribution Recordkeeping Operations System that was designed and implemented throughout the period October 1, 2019 to September 30, 2020;
- b. the controls related to the control objectives stated in the description were suitably designed to provide reasonable assurance that the control objectives would be achieved if the controls operated effectively throughout the period October 1, 2019 to September 30, 2020, and subservice organizations and user entities applied the complementary controls assumed in the design of MassMutual's controls throughout the period October 1, 2019 to September 30, 2020; and
- c. the controls operated effectively to provide reasonable assurance that the control objectives stated in the description were achieved throughout the period October 1, 2019 to September 30, 2020 if complementary subservice organization and user entity controls, assumed in the design of MassMutual's controls, operated effectively throughout the period October 1, 2019 to September 30, 2020.

Restricted Use

This report, including the description of tests of controls and results thereof in section IV, is intended solely for the information and use of management of MassMutual, user entities of MassMutual's Defined Benefit and Defined Contribution Recordkeeping Operations System during some or all of the period October 1, 2019 to September 30, 2020, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by user entities themselves, when assessing the risks of material misstatement of user entities' financial statements. This report is not intended to be and should not be used by anyone other than these specified parties.

KPMG LLP

November 19, 2020
New York, NY

Section II
MassMutual's Management Assertion



Massachusetts Mutual Life Insurance Company
1295 State Street
Springfield, MA 01111

MassMutual's Assertion

November 19, 2020

We have prepared the description of Massachusetts Mutual Life Insurance Company's (MassMutual or the Company) Defined Benefit and Defined Contribution Recordkeeping Operations System entitled, "Description of the Defined Benefit and Defined Contribution Recordkeeping Operations System", for processing user entities' transactions throughout the period October 1, 2019 to September 30, 2020 (description) for user entities of the system during some or all of the period October 1, 2019 to September 30, 2020, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by subservice organizations and user entities of the system themselves, when assessing the risks of material misstatement of user entities' financial statements.

MassMutual uses the subservice organizations identified in Section III to perform some of the services provided to user entities that are likely to be relevant to those user entities' internal control over financial reporting. The description includes only the control objectives and related controls of MassMutual and excludes the control objectives and related controls of the subservice organizations. The description also indicates that certain control objectives specified in the description can be achieved only if complementary subservice organization controls assumed in the design of our controls are suitably designed and operating effectively along with the related controls at MassMutual. The description does not extend to controls of the subservice organizations.

The description indicates that certain control objectives specified in the description can be achieved only if complementary user entity controls assumed in the design of MassMutual's controls are suitably designed and operating effectively, along with related controls at MassMutual. The description does not extend to controls of the user entities.

We confirm, to the best of our knowledge and belief, that:

- a) The description fairly presents the Defined Benefit and Defined Contribution Recordkeeping Operations System made available to user entities of the system during some or all of the period October 1, 2019 to September 30, 2020 for processing their transactions as it relates to controls that are likely to be relevant to user entities' internal control over financial reporting. The criteria we used in making this assertion were that the description
 - i. presents how the system made available to user entities of the system was designed and implemented to process relevant user entity transactions, including, if applicable,
 - (1) the types of services provided, including, as appropriate, the classes of transactions processed;
 - (2) the procedures, within both automated and manual systems, by which those services are provided, including, as appropriate, procedures by which transactions are initiated, authorized, recorded, processed, corrected as necessary, and transferred to the reports and other information prepared for user entities of the system;
 - (3) the information used in the performance of the procedures, including, if applicable, related accounting records, whether electronic or manual, and supporting information

involved in initiating, authorizing, recording, processing, and reporting transactions; this includes the correction of incorrect information and how information is transferred to the reports and other information prepared for user entities;

- (4) how the system captures and addresses significant events and conditions other than transactions;
 - (5) the process used to prepare reports and other information for user entities;
 - (6) services performed by a subservice organization, if any, including whether the carve-out method or the inclusive method has been used in relation to them;
 - (7) the specified control objectives and controls designed to achieve those objectives, including, as applicable, complementary user entity controls and complementary subservice organization controls assumed in the design of the service organization's controls;
 - (8) other aspects of our control environment, risk assessment process, information and communications (including the related business processes), control activities and monitoring activities that are relevant to the services provided.
- ii. includes relevant details of changes to MassMutual's system during the period covered by the description.
 - iii. does not omit or distort information relevant to MassMutual's system, while acknowledging that the description is prepared to meet the common needs of a broad range of user entities of the system and their auditors, and may not, therefore, include every aspect of the Defined Benefit and Defined Contribution Recordkeeping Operations System that each individual user entity of the system and its auditor may consider important in its own particular environment.
- b) The controls related to the control objectives stated in the description were suitably designed and operating effectively throughout the period October 1, 2019 to September 30, 2020 to achieve those control objectives if subservice organizations and user entities applied the complementary controls assumed in the design of MassMutual's controls throughout the period October 1, 2019 to September 30, 2020. The criteria we used in making this assertion were that:
- i. the risks that threaten the achievement of the control objectives stated in the description have been identified by management of MassMutual;
 - ii. the controls identified in the description would, if operating effectively, provide reasonable assurance that those risks would not prevent the control objectives stated in the description from being achieved; and
 - iii. the controls were consistently applied as designed, including whether manual controls were applied by individuals who have the appropriate competence and authority.

Massachusetts Mutual Life Insurance Company

Section III
**Description of the Defined Benefit and Defined
Contribution Recordkeeping Operations System**

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations System

Description of the Defined Benefit and Defined Contribution Recordkeeping Operations System

Scope of the Report

This document was prepared according to the American Institute of Certified Public Accountants standards and related interpretations.

Massachusetts Mutual Life Insurance Company (MassMutual or the Company) operates the following Defined Benefit (DB) and Defined Contribution (DC) recordkeeping systems based on market segments. The systems are as follows:

- DB and DC Recordkeeping Systems using the Proprietary Recordkeeping System (PRS), Participant Accounting System (PAS), and Case Accounting System (CAS) systems,
- Tax Exempt Market DC Recordkeeping System using the FIS OMNIPlus (OMNI) DC Recordkeeping System, and
- Mid-Size Corporate Market DC Recordkeeping System using the TRAC, software-as-a-service (SaaS) system.

This report was developed by MassMutual management to communicate information concerning services provided to its DB and DC clients that have Plans supported on the PRS, CAS and PAS recordkeeping systems. Therefore, it focuses on the significant business processes and controls that MassMutual management has determined to be common for a majority of clients subscribing to its DB and DC recordkeeping services and does not cover all aspects of the services provided or procedures followed. The scope of this report does not include services that use the OMNI and TRAC recordkeeping systems. Separate service organization reports are available for these systems.

The report describes MassMutual's business process related control objectives for DB and DC Recordkeeping Operations that use CAS, PAS and PRS systems throughout the period October 1, 2019 to September 30, 2020. General Information Technology Controls applicable to the MassMutual DB and DC Recordkeeping Operations system are provided by the Enterprise Technology and Experience (ETX) organization and are not addressed in this report but are described and examined in the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System SOC 1[®] Report for the period October 1, 2019 through September 30, 2020, which is also available from MassMutual. Investment Services Operations is responsible for non-guaranteed interest account (GIA) pricing and trading activity. While not in scope for this report, an Investment Services Operations SOC 1[®] Report for the period October 1, 2019 through September 30, 2020, which is also available from MassMutual.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Operations System

Background

MassMutual is a provider of defined contribution, defined benefit, and nonqualified deferred compensation retirement products and services for corporate, union, Professional Employer Organizations (PEO), nonprofit and governmental customers across the United States. MassMutual offers a full range of products and services – from plan administration to customer communications – designed to simplify a complex business. Solutions are provided through retirement plan professionals, consultants, and third-party administrators. MassMutual has three primary service models:

- DC full service investment and recordkeeping for profit sharing, money purchase, 401(k), 457 governmental and 403(b) plans.
- DC investment and/or recordkeeping for 401(k) plans administered by Third-Party Administrators (TPA). Controls associated with the services provided by TPAs are not part of this SOC 1[®] report examination.
- DB services for traditional plans and nontraditional plans such as cash balance plans and floor offset arrangements. The variety of services offered includes actuarial valuation, benefit calculation, and payment, consulting services and Form 5500 preparation.

MassMutual's performance reflects a combination of more than 65 years of experience, investment management expertise, and innovative technology with personalized services. It offers a full range of products and services for corporate, union, nonprofit and governmental employers' defined benefit, defined contribution and nonqualified deferred compensation plans. It serves approximately 2.6 million participants. Communication with customers and participants is essential. Participants seek to better understand their retirement plans and capabilities, and plan sponsors and retirement professionals seek to be better informed about regulatory issues and ways they can help participants prepare for retirement. MassMutual is committed to developing and delivering results-driven communications that are designed to meet the needs of all of its customers.

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Complementary Subservice Organization Controls (CSOCs)

MassMutual's systems and the controls over DB and DC Recordkeeping Operations system processing were designed with the assumption that certain control objectives can be achieved only if the CSOCs are implemented by the subservice organizations. The description includes only the controls and related control objectives of MassMutual and excludes the control objectives and related controls of the subservice organizations. The application of such CSOCs by subservice organizations support the achievement of control objectives identified in this report. The subservice organization control considerations presented below should not be regarded as a comprehensive list of all of the controls that should be employed by the subservice organizations.

External Subservice Organization	Services Provided	Related Control Objectives	Complementary Subservice Organization Controls
DST	DST Systems (DST) Automated Work Distributor (AWD) Document Image Handling and Distribution is used for the scanning of hardcopy client and participant MassMutual documents mailed to a MassMutual address at DST's headquarters to create electronic versions for electronic distribution to MassMutual Operations staff for processing.	Control Objective 2, DC and DB Plan Administration: Participant Maintenance Control Objective 5, DC Plan Administration: Distributions and Payments Control Objective 6, DB Plan Administration: Distributions and Payments Control Objective 7, DB Plan Administration: Distributions and Payments	DST should have controls in place to ensure scanned batches are transferred into AWD completely and accurately and any errors are researched and resolved for timely electronic delivery to MassMutual.
SE2	Effective 10/1/2019 to 12/19/2019 SE2 was used to process and administer participant lump sum and repetitive payments for a limited number of DB plans.	Control Objective 6, DB Plan Administration: Distributions and Payments	SE2 should have controls in place to ensure payments to participants are authorized and processed completely, accurately, and timely.

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External Subservice Organization	Services Provided	Related Control Objectives	Complementary Subservice Organization Controls
Matrix	<p>Matrix Trust Company is used for trust and investment services and is fully integrated with the MassMutual systems for newly onboarded Qualified & Non-Qualified DB plans.</p>	<p>Control Objective 1, DB Plan Administration: Plan Installation</p> <p>Control Objective 4, DC and DB Plan Administration: Investment Asset Valuation</p> <p>Control Objective 6, DB Plan Administration: Distributions and Payments</p> <p>Control Objective 7, DB Plan Administration: Contributions</p> <p>Control Objective 8, DB Plan Administration: Transfers</p>	<p>Matrix should have controls in place to ensure plan setup, distributions and payments, contributions and collections and plan investment transfers are authorized processed completely, accurately and timely. Additionally, they should have controls in place over completeness and accuracy of trading and settlement transactions.</p>

All third party subservice organizations contracted by MassMutual undergo stringent review prior to acceptance. Additionally, MassMutual obtains SOC 1[®] reports as available from subservice organizations which are reviewed for control weaknesses that could potentially impact MassMutual’s business processing and to identify any ‘complementary user entity’ controls identified by the subservice providers that MassMutual may need to address to help ensure the successful achievement of the subservice provider’s control objectives.

Where SOC 1[®] or similar attestations are not available, or the SOC 1[®] provided does not cover the operations pertinent to MassMutual, MassMutual conducts appropriate periodic quality and due diligence procedures.

Enterprise Technology and Experience (ETX) organization provides the General Information Technology Controls (GITC) system in support of the DB and DC recordkeeping systems used to support MassMutual business operations. ETX should have controls over: documenting, authorizing, testing, approving and implementing application changes; documenting, authorizing, testing, approving and implementing system software changes; physical security and environmental protection of computer equipment and storage media; provisioning, termination, and recertification of user access based upon job responsibilities;; the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule; and the completion and security of data transmissions, and identification and resolution of failures. While these GITCs are not addressed in this report, they may be found in the “Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System SOC 1[®] Report” for the period October 1, 2019 through September 30, 2020 which is available from MassMutual. All control objectives in this report rely on ETX as a subservice provider as the application controls within the business processes rely upon an effective GITC environment.

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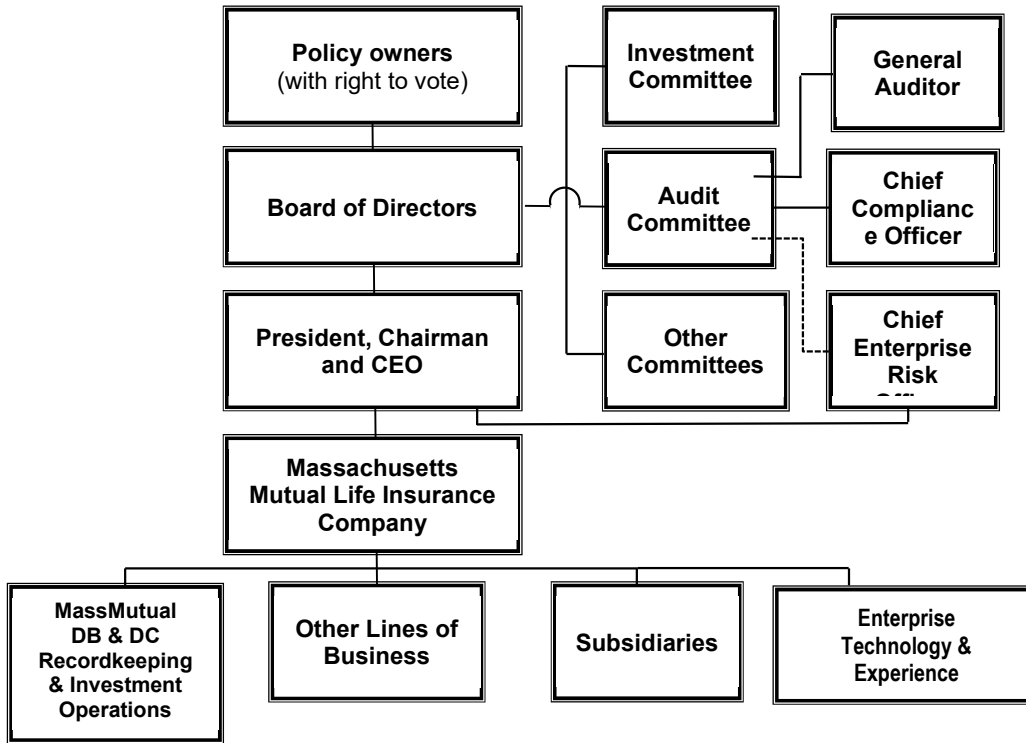
Subservice Organization General IT Controls: The business process control objectives listed in the subservice table are dependent on each subservice organization having appropriate controls over application change management and logical access, and if applicable physical security and environmental controls, job processing and data transmissions.

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Internal Control Elements

Control Environment

The following is an organization chart of the Company as of September 30, 2020:



The control environment reflects the tone of control consciousness set by an independent Board of Directors and the President/Chairman/Chief Executive Officer. It is the foundation of all other aspects of internal control. The Board of Directors provides oversight for MassMutual activities, including the Investment and Audit Committees of the Company. The Investment Committee exercises supervision and control of company investments and related financial matters, approves company investment policies and guidelines and reviews company investment strategies and investment performance. The Audit Committee is made aware of significant changes to the Company’s policies and practices with respect to accounting, financial controls, and financial reporting, including those within MassMutual.

The Company has formal hiring practices that are designed to confirm that new associates are qualified for their job responsibilities. For each position, minimum education and experience requirements are identified and HR policy requires satisfactory completion of reference for Executive level positions only, drug, background and certain criminal checks for all positions.

Training of personnel is accomplished through supervised on-the-job training and external and internal training courses. A MassMutual employee Onboarding program has been established for new hires and tenured employees to provide a strong foundation for acquiring business knowledge through education. In addition, formal new hire curriculums are in place for key customer facing roles in the organization including the Participant Call Centers, Account Management, Recordkeeping, Relationship Management, New Business, Sales and Education Specialists. The new hire curriculums include standard formal training along

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with regular assessments. Training reports are available for managers to track employee progress towards development goals. Focus is also placed on protecting the investment in strategic portfolio initiatives by ensuring appropriate training and readiness of employees. It is MassMutual management's responsibility to determine that all MassMutual associates have received appropriate training. Department managers also encourage training and development that continues to qualify personnel for their functional responsibilities.

The associate performance evaluation process is an ongoing performance review and part of the employee development process. All associates receive feedback on their overall responsibilities, including internal controls, on a regular basis or at least twice a year. Associates identify their specific performance and development goals designed to enhance their knowledge of and ability to best service the retirement plans. During the evaluation and feedback process, any areas requiring improvement are identified and associates are coached on the ways they can improve their performance and meet their development objectives.

MassMutual policies, procedures, and controls are subject to regular reviews by corporate governance, risk, and control functions. Corporate Audit, Compliance and Ethics, Enterprise Risk Management, Financial Reporting Risk, Corporate Law, and Enterprise Information Risk Management functions are designed to evaluate compliance with Company policies in addition to governmental regulations that govern retirement service operations. Formal reports documenting the scope and results of reviews performed by the governance, risk and control functions are prepared and submitted to Company management as well as the Audit Committee of the Board of Directors as applicable.

A summary of the Company's policies and procedures is incorporated in its Code of Conduct (the Code). All associates must certify that they have read the Code and agree to follow the Company's Code of Conduct and the underlying policies and practices. The Company has a formal conflict-of-interest policy, which establishes rules of conduct for associates. Specifically, associates are prohibited from divulging confidential information regarding Plan Sponsor affairs, trading in securities of the Plan Sponsors or affiliates or taking any action that's in conflict with the best interests of the plan. In addition, associates (access persons) who have access to non-public information about securities holdings of our mutual funds and separate investment accounts (SIAs) must provide periodic brokerage statements to a compliance officer for review if they have an outside brokerage account.

Risk Assessment

MassMutual's Enterprise Risk Management group (ERM) has a dedicated business risk management function that collaborates with various corporate governance risk and control functions to regularly assess the risk that could impede MassMutual's ability to service DB and DC plans. The business risk management function works with MassMutual management to identify the services that meet the common needs of its user constituencies and to help assess the risks that result in the appropriate controls being put in place. Periodic risk and operations management meetings are held to ensure that risk assessment is a continuous process throughout the year. In addition to the risk assessment performed by the business risk management function, ERM and other Corporate entities perform additional risk assessments that are intended to provide perspective on relevant MassMutual risk.

- Enterprise Information Risk Management and Third Party Risk Management facilitate regular risk assessments of subservice providers utilized by MassMutual.
- Financial Reporting Risk facilitates annual risk assessments which include the potential for fraud over operations that support the generation of MassMutual Financial Reporting.
- Corporate Audit performs regular risk assessments to select MassMutual operations to be audited.
- Compliance and Ethics Department performs regular risk assessments to select MassMutual operations for business reviews.

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The results of the risk assessments and any subsequent audits or reviews are communicated to MassMutual management and the business risk management function in ERM. ERM works with operations to help ensure actions identified and required to mitigate risk are taken.

In addition to the above and with respect to MassMutual management's SOC 1® assertion process, MassMutual Operations Management annually reviews the narrative description, the control objectives it has set, and the design of individual controls identified to help achieve those objectives. MassMutual Operations have charted their risks and review existing process descriptions with departmental groups to help ensure that (a) new or changing risks are identified early, (b) the design of controls are still valid, and (c) staff are aware of their responsibilities with regards to ensuring the controls operate effectively. Upon completion of the review, the results of the assessments are compared with existing operations policies and if appropriate changes are made. This process also occurs during the year when business changes may dictate it.

Control Activities

MassMutual employs a number of control activities to help ensure DB and DC plans are administered in accordance with policies and procedures. A formal program is in place to help ensure its policies and procedures are complete, accurate and kept current. Changes to policies and procedures are reviewed and approved by management and communicated to associates via weekly newsletters, team meetings, web casts, or formal classroom training.

Controls are established to check for timeliness, accuracy, completeness and authorization as well as activities encompassing the physical security of assets, records, and systems. In addition, the responsibilities of MassMutual and other support areas are allocated among personnel to segregate select processing and recording of transactions, investment trading, reconciliation activities, application development, and compliance and control monitoring.

Monitoring

MassMutual management utilizes a variety of reports and monitoring mechanisms to help ensure controls are in place and functioning as intended. Such reports include:

- Visual Boards displaying the status of pending transactions
- Suspense Account Reporting
- Quality Review Results Reporting
- Financial Account Reconciliations
- Daily Pricing Variances
- Deficiency and Incident Reporting
- System Batch Monitoring Reporting

Enterprise Risk Management and other corporate governance risk and control functions regularly review and assess operations to determine whether reporting and monitoring mechanisms are utilized by MassMutual management. Issues are timely communicated to senior management and the board of directors as appropriate, and follow-up actions are taken as necessary.

Corporate Audit Department (CAD)

Based on its periodic risk assessments of Company operations, CAD conducts internal audits of MassMutual business operations and systems. The results of the audits are presented to MassMutual management who are required to respond with action plans to remediate audit findings.

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Information and Communication

MassMutual management consistently and regularly communicates the importance of following policies and procedures as well as the importance of complying with the rules and regulations that govern our operations. Management uses a variety of mechanisms to communicate this message including department meetings and compliance newsletters. Additionally, MassMutual Corporate Policies and Procedures help enforce the importance of open communication channels through Corporate Policies and Procedures Manuals such as the Code of Conduct. Associates are encouraged and empowered to identify and raise concerns and issues to management to facilitate appropriate and timely resolution. MassMutual employs a number of tools to facilitate open communication such as the MassMutual Compliance and Ethics Reporting Hotline. Additionally, the employee and manager performance evaluation program is designed to encourage open and regular communication and information sharing.

MassMutual also encourages and maintains two way communications with its Plan Sponsor and participant clients regarding the services that MassMutual provides including new and changed products, privacy and security concerns and satisfaction with services offered and scope and availability of related SOC reports. Similarly, MassMutual also maintains regular two-way communication with its subservice organizations to comment on service levels and to discuss changes in operational practices.

Other Considerations

The Company is subject to regulation and supervision by the Division of Insurance of the Commonwealth of Massachusetts as well as other countries and states in which business is conducted. As such, the Company is required to file periodic reports with and is subject to periodic examination by, the Commonwealth of Massachusetts as well as other countries and states where business is. The Company's most recent, completed examination by the Division of Insurance was for the year ended December 31, 2014; an examination for the year ended December 31, 2019 was initiated but not completed during the period. In addition, MassMutual is subject to regulation by the Department of Labor (DOL), the Internal Revenue Service (IRS), the Securities and Exchange Commission (SEC), and the Financial Industry Regulatory Authority (FINRA).

Changes in the Control Environment

As part of ongoing operations, MassMutual makes changes to its operations and various support group's roles and responsibilities to better align the business to service clients.

The below changes to the in-scope control environment were introduced during the period:

- SE2 was used to process and administer participant lump sum and repetitive payments for a limited number of DB plans. Effective 12/20/2019 all repetitive payments are processed on PAS.
- In Q1 and Q2 2020, MassMutual responded to the requirements of the CARES act passed by congress and modified processes, where appropriate, to meet customer needs. This included the following two control changes:
 - Addition of the Legislative Control (Control 2.15)
 - Modification to the loan request amount (Control 5.4)
- Investment Services Operations is responsible for non-GIA pricing and trading activity. The controls related to this have been removed from Control Objective 4 and are now in a separate SOC 1, Investment Services Operations SOC 1[®] Report for the period October 1, 2019 through September 30, 2020, which is also available from MassMutual.

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Information Processing

The Company has established and implemented General Information Technology Controls applicable to DB and DC Recordkeeping computer systems. These are described in the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System SOC 1® Report available to clients of MassMutual and their auditors.

PRS, PAS, CAS DB and DC Recordkeeping Systems Overview

Below lists MassMutual's key business applications supporting its internally developed MassMutual PRS, PAS and CAS DB and DC recordkeeping system that are hosted at the Company's Springfield, Massachusetts Data Center. Matrix is an externally hosted system at Matrix Financial Solutions

- Advantage/LVAdmin (LVAdmin): Performs individual benefit calculations for DB participants. LVAdmin is a Windows based application.
- Proprietary Recordkeeping System (PRS): Maintains DC records on a plan and participant level; accounts for contributions received by MassMutual; receives Net Asset Value (NAV) information from the Consolidation and Routing System (CaRS); and sends summary DC, contract, and plan level data to the Case Accounting System (CAS). While PRS is not used for DB recordkeeping, it should be noted that PRS is used to support limited DB functions such as providing Plan Sponsor fund information for web access, Compliance Testing and Reporting Service (CTRS) statement creation and Plan Sponsor fee disclosure. PRS is a client server application and is operated on an HP/UNIX server.
- Case Accounting System (CAS): The primary DB recordkeeping system. Maintains DB records and tracks investments and contributions on a plan and contract level; reports daily financial activity; processes reserves and periodic payments; receives summary DC contract and plan level data from PRS and receives periodic payment expense and reserve information from PAS. CAS is operated in a Windows environment with some supporting functions operated in a Unix environment.
- Matrix: For newly onboarded plans Matrix is a registered digitally enabled investment platform available for servicing Qualified & Non-Qualified DB contracts offering a wide range of investment services. Matrix Trust Company is an externally hosted system at Matrix Financial Solutions.
- Participant Accounting System (PAS): DB only. Maintains individual retiree pension accounts; calculates reserves, benefits and taxes; sends daily electronic fund transfers to banks; and sends periodic payment, expense and reserve information to CAS. PAS is operated on an IBM AIX environment.
- Fundlinx: Collects NAVs, unit values and portfolio investments for group annuity and direct mutual fund investments; receives distribution rates, NAVs, trades from the recordkeeping system and action items from the National Securities Clearing Corporation (NSCC); and transmits daily trades to the NSCC and to Mutual Fund companies. Fundlinx is a vendor built application operated in the Windows environment.
- Automated phone system: Provides DC and DB plan participants with confidential access to account information from any touch-tone telephone, 7x24x365 access. The automated phone system is operated on a Voice Response Unit (VRU) system which is on a vendor platform, inContact. The automated phone system is used to direct participants to a call center employee in order to obtain account balances, change investment elections, initiate investment transfers, process enrollments, obtain investment performance data and request loans (if applicable to the

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specific plan). This system directs participants to the call center to make their changes. The actual processing occurs within PRS.

- RetireSMARTSM: Provides DC and DB participants and plan sponsors with secure 7x24x365 access to their accounts via the Internet. RetireSMARTSM can be used to obtain account and loan balances, change investment elections, initiate investment transfers, process enrollments, obtain investment performance data, initiate participant loans, change salary deferrals, obtain benefit calculations, make address, e-mail address and PIN changes and maintain beneficiary information. RetireSMARTSM is operated on a Windows Web Farm.
- Total Retirement Center (TRC): Provides DC and DB plan sponsors with secure 7x24x365 access to their accounts via the Internet. The TRC provides retirement plan sponsors with access to plan information, participant account information, secure file transfer, investment performance, plus commentary on the financial markets, product and service announcements, participant communication materials, service initiation, news on industry trends, legislative activity, and the latest products and services. TRC is a web-enabled application.
- RetireSMARTSM MobileApp: Provides DC and DB participants and plan sponsors with secure 7x24x365 access to their accounts via the Internet. The App can be used to obtain account balances, change investment elections, rebalance existing investment portfolios and request loans (if applicable to the specific plan).
- Pension Bank Reconciliation System (PBRS): Tracks DB contribution wires received from J. P. Morgan Chase Bank.
- TCC: TCC is a treasury application used for internal cash reporting.
- Automated Work Distribution (AWD): The system automates the handling and distribution of hardcopy client and participant documents. Physical imaged data is hosted at the 3rd party site. Document images are presented to authorized MassMutual analysts through a remotely accessed, secure workflow application. Documents cannot be edited or deleted and remain in the recipients work queue until the MassMutual analyst takes appropriate processing action. Analyst work queue statistics are displayed on wall mounted monitors to facilitate manager oversight and Analyst work load balancing. Physical imaged data is hosted at the 3rd party site. This system is hosted by DST Systems in Kansas City, MO.
- DataSMART- Provides reporting, tracking, data extracts, and workflow automation for DB and DC legislative indicative plan changes.
- Quickbase- For new DC business, Quickbase is used for tracking new business area reviews. Quickbase is an externally hosted system at Quickbase, Inc.

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Description of Operations

Defined Contribution and Defined Benefit Plan Installation

DC Plan Installation and Conversions

New business works with customers, prior service providers, or TPAs to help ensure a smooth transition on all plan installations and conversions. New business associates monitor established timelines and installation documents are monitored to determine that plans are installed in accordance with agreed upon timeframes. Funds from a prior recordkeeper/investment manager are accepted, a new contract is setup, a conversion, or internal spin-off occurs in PRS only after the Contract Effective Date and upon receipt of an authorized “Administrative Services Agreement,” the “TPA New Business Application,” or the “Investment Agreement” from the Plan Sponsor. A second individual in new business reviews all plan information manually entered into PRS for new contracts and conversions by comparing plan information to the details defined in the plan documents. New business associates perform reconciliations on participant data received and financial balances entered in PRS to information received from the prior recordkeeper, and discrepancies are investigated and resolved timely. An automated routine is run to identify participant data integrity issues and discrepancies are investigated and resolved timely.

DB Plan Installation and Conversions

New business works with customers and/or their prior service providers to help ensure a smooth transition on all plan installations and conversions. Full service new business plans are established in Matrix. Established timelines and installation documents are monitored by new business associates to determine that plans are installed in accordance with agreed upon timeframes. Using a standardized checklist, a second individual in new business reviews all plan information manually entered into PRS, CAS, and PAS, for new installations and conversions by comparing plan information to the details defined in the contract, service agreement or Matrix documents, if applicable. MassMutual communicates to the Plan Sponsor its interpretation of the plan requirements in the form of a Plan Provision Guide and receives approval from the Plan Sponsor or sends a Plan Provision Guide Waiver before entering plan details into LVAdmin. Plan Sponsors are responsible for reviewing and approving the Plan Provision Guide provided by MassMutual and notifying MassMutual of any discrepancies. Once data is loaded into LVAdmin, a series of validation routines are run for both inactive and active payees. The results of these validation routines are then manually compared to information from the prior recordkeeper and provided to the Plan Sponsor to confirm that all of the data was input into LVAdmin correctly. The results of test plans developed for all new plan installations in LVAdmin are approved prior to putting the plan into production.

Funds from a prior recordkeeper/investment manager are accepted, a new contract or trust document is setup, or a conversion occurs in CAS or Matrix after the Contract/trust document Effective Date and asset allocation instructions are received and authorized by the Plan Sponsor via an “Investment Allocation Letter,” “Services Agreement” or appropriate Matrix agreement. New business associates perform a walkthrough with the Plan Sponsor of the plan’s features on the TRC including benefit calculations and approval is received from the Plan Sponsor before RetireSMARTSM access is enabled and self-registration post cards are issued to participants via mail or e-mail. All plan information manually entered into LVAdmin is reviewed by comparing plan information to the details defined in the plan documentation. Plans are reviewed for compliance with regulatory requirements by Regulatory Advisory Services.

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Defined Contribution and Defined Benefit Participant and Plan Administration and Maintenance

DC Participant and Plan Administration and Maintenance

Participant Data

Participants can be added to contracts in PRS either manually or electronically. Manual enrollments are processed only after the appropriate enrollment documentation is reviewed for authorization, completeness, and accuracy prior to release to PRS. Enrollments are processed by recordkeeping operations associates with an internal goal to complete by 5 business days of receipt, not to exceed 10 business days if received in good order.

For electronic enrollments, Plan Sponsors must authenticate to the TRC using a unique ID (member ID) and password in order to submit a data file or eligible file authorizing participants for enrollment. For plans that have elected the automatic enrollment feature, participants are identified by the Plan Sponsor on a data file transmitted through the TRC and are setup in PRS upon eligibility in accordance with plan parameters (e.g. investment selections and deferral percentages). An individual record is established and maintained for each participant in PRS. Each record contains the relevant and necessary indicative data for the plan's participants. Indicative data includes such information as: name, social security number (SSN), address, date of birth, date of hire, participation date, beneficiary information, investment elections, etc.

Participant indicative changes can be initiated through the Participant Call Center, RetireSMARTSM or they can be sent to MassMutual by mail, email or fax. Plan Sponsors can also initiate participant indicative changes through RetireSMARTSM via the TRC. Participants can change future investment elections using the RetireSMARTSM Mobile App. Access to all systems is controlled by a unique user identifier and a Participant Identification Number (PIN) or password. Authorization to conduct all activity initiated on the mobile device is controlled at the secured, core application level and not by the mobile device.

For access to RetireSMARTSM and TRC, failure to enter the correct RetireSMARTSM or TRC password after a predefined number of attempts will result in the user ID being locked. Participants create their own account in RetireSMARTSM by answering questions and then creating a password. Participants can reset their RetireSMARTSM passwords by answering predefined security questions. TRC passwords require reset by authorized MassMutual personnel. Plan Sponsors receive an initial TRC password from MassMutual. The first time Plan Sponsors log in to the TRC, it will prompt a password change and require three security questions and responses to be set up. TRC passwords can be reset following the provision of correct answers to the security questions. Effective 11/6/2019, prior to accessing RetireSMARTSM and the RetireSMARTSM Mobile App participants must pass identity proofing and authenticate using multi-factor authentication. Digital Threat Detection is also used to corroborate user identity and identify abnormal and risky behavior. If abnormal and risky behavior is identified the Fraud Surveillance team investigates this activity.

The Participant Call Center is comprised of the Participant Information Center (PIC) and Participant Transition Services (PTS). PTS is set up for those participants planning retirement or terminating employment. PTS and PIC share the same systems.

Participant calls to the Participant Call Center are recorded. A sample of calls is reviewed on a daily basis by a quality associate for compliance with caller identity confirmation workflow, accuracy of information communicated, and customer service and satisfaction.

A web server interface program is configured to perform consistency checks to identify missing or incorrectly formatted data received from a participant through RetireSMARTSM and the RetireSMARTSM Mobile App prior to sending the information to PRS. Data files such as annual census data are uploaded to

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the web servers by Plan Sponsors via the TRC, Secure File Transfer Protocol (SFTP) and VPN. This information must be corrected prior to it being passed to PRS.

Participant indicative changes received by mail, e-mail, or fax are reviewed for authorization, completeness, and accuracy prior to release to PRS. Participant indicative changes are processed by recordkeeping operations associates with an internal goal to complete by 5 business days of receipt, not to exceed 10 business days if received in good order. Change confirmation notifications are automatically generated for participant indicative changes and mailed. For address changes the confirmation is sent to both the old and new address confirming the change was requested and authorized.

Plan Data

Plan indicative data is used by PRS to administer plans in accordance with plan documents. Expense changes, Executed Plan Amendments and Plan Investment changes are reviewed by recordkeeping operations associates based on predetermine criteria for authorization by the Plan Sponsor prior to being updated on PRS and/or CAS. Changes are reviewed by an independent team member after entry to determine they were entered completely and accurately.

In response to major legislation or other unforeseen circumstances MassMutual may collect Plan Sponsor and or TPA elections for plan changes outside of our normal amendment or change processes. Under these projects, the plan sponsor or TPA response is collected via a custom form or survey, responses are tracked in an application specific to the project, related system updates (if any) are done one at a time or in bulk as dictated by volumes and complexity, and the actual responses (or recreated electronic representation of the completed survey) are archived in the applicable imaging system. If system updates are processed in bulk a general QC is performed. If an amendment is required by the legislation, for plans that utilize our document services, it will be generated and sent when available. As each individual circumstance occurs a process is determined that defines all workflows, the required system updates, if any and any related quality control necessary.

DB Participant and Plan Administration and Maintenance

Participant Data

Qualified employees are added to existing DB plans upon receipt of new participant information received from the Plan Sponsor. The submitted participant information is uploaded into LVAdmin during the annual census process and upon receipt of periodic data exchange files. An individual record is established and maintained for each participant in LVAdmin. Each record contains the relevant and necessary indicative data for the plan's participants. Indicative data includes such information as: name, SSN, address, date of birth, date of hire, participation date, beneficiary information, etc. Import and validation errors generated by LVAdmin during the census and periodic data file transmissions are reviewed and resolved by recordkeeping operations associates.

Participant indicative changes can be initiated through the Participant Call Center, RetireSMARTSM the automated phone system or they can be sent to MassMutual by mail, email or fax. Plan Sponsors can also initiate participant indicative changes through RetireSMARTSM via the TRC. Access to all systems is controlled by a unique user identifier and a Participant Identification Number (PIN) or password.

For access to RetireSMARTSM and TRC, failure to enter the correct RetireSMARTSM or TRC password after a predefined number of attempts will result in the user ID being locked. Participants create their own account on RetireSMARTSM by answering questions and then creating a password. Participants can reset their RetireSMARTSM passwords by answering predefined security questions. TRC passwords require reset by authorized MassMutual personnel. Plan Sponsors receive an initial TRC password from MassMutual. The first time Plan Sponsors log in to the TRC, it will prompt a password change and require three security questions and responses to be set up. TRC passwords can be reset following the provision of correct answers to the security questions. Effective 11/6/2019, prior to accessing RetireSMARTSM and the

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RetireSMARTSM Mobile App participants must pass identity proofing and authenticate using multi-factor authentication. Digital Threat Detection is also used to corroborate user identity and identify abnormal and risky behavior. If abnormal and risky behavior is identified the Fraud Surveillance team investigates this activity.

Participants that wish to call the Participant Call Center are first required to authenticate through the automated phone system before selecting a menu option to connect to the Participant Call Center. Failure to enter the correct PIN after a predefined number of attempts will result in the user ID being locked and the participant being re-directed to a representative at the Participant Call Center.

Participant calls to the Participant Call Center are recorded. A sample of calls is reviewed daily by a quality associate for compliance with caller identity confirmation workflow, accuracy of information communicated, and customer service and customer satisfaction.

Participant indicative change requests received by mail, e-mail, fax or a Call Center Representative are reviewed by recordkeeping operations associates for completeness and authorization and are processed by the date of the next PAS check run or EFT Direct Deposit if received in good order. The entries are reviewed for accuracy by an independent team member prior to release to PAS.

For participants who are receiving periodic payments out of PAS, change confirmation notifications are automatically generated. For address changes the confirmation goes to both the old and new address confirming the change was requested and authorized.

A web server interface program is configured to perform consistency checks to identify missing or incorrectly formatted data received from a participant through RetireSMARTSM prior to sending the information to PRS. Data files such as annual census data are uploaded to the web servers by Plan Sponsors via the TRC, Secure File Transfer Protocol (SFTP) and VPN. This information must be corrected prior to it being passed to PRS.

Plan Data

Plan indicative data is used by CAS, PRS and LVAdmin to administer plans in accordance with plan documents. Indicative data includes such information as: plan type, investment options, etc. Changes to indicative data are initiated upon receipt of an authorized plan, contract, or services agreement amendment. All plan changes are entered into CAS, PRS by recordkeeping operations associates after they are reviewed for authorization. After entry into CAS, PRS an independent team member reviews the entry to verify it was entered completely and accurately prior to release. All plan changes made in LVAdmin are reviewed by an independent team member after input to verify that they were entered completely and accurately.

Defined Contribution Administrative Expenses

DC Administrative Expenses

Administrative expenses and recovery methods (e.g. billed or deducted) are specified in PRS in accordance with contract and/or service agreement provisions. Expenses are calculated and billed or deducted based on the expenses parameters built into PRS. Monthly expense statements are sent to plan sponsors detailing amounts deducted or amounts owed.

Defined Contribution and Defined Benefit Value Rates

DC and DB Value Rates Stable value investment products are valued at contract value. Fair value is provided by MassMutual when applicable. Contract value consists of contributions, plus investment income, less benefit payments and administrative expenses. Fair value represents the liquidation value as documented under the terms of the group annuity contract. The liquidation formula is prepared by a Fellow

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of the Society of Actuaries (FSA) of the Company and is maintained on file with the Secretary of the Company. Any revisions to this formula are communicated in writing to the Plan Sponsor.

For DB Participating contracts (IP: Immediate Participation Contract, PF: Pension Funding Contract, DA: Deposit Administration Contract, GA: Group Annuity Contract and certain IG: Interest Guarantee Contracts) investing in the GIA, an FSA reviews and approves annual experience interest rates using the Investment Year Method series of rates determined by an FSA prior to input into CAS. An independent team member reviews for accuracy the annual experience rates entered into CAS by an accounting operations associate.

For Individually Rated contracts investing in the GIA, the Stable Value Maintenance (SVM) team lead and an FSA reviews and approves each contract's anniversary interest crediting rate, as well as any off anniversary changes, determined by a SVM associate prior to input into PRS and CAS. A review for accuracy is performed to confirm the interest crediting rates were entered correctly into PRS and CAS.

For Pooled contracts investing in the GIA, an FSA lead reviews and approves annual and semi-annual interest crediting rates determined by a SVM associate prior to input into PRS. A review for accuracy is performed to confirm all plans have the appropriate rate in the respective pool based on the "book value" guaranteed crediting rates entered into PRS.

For contracts that have elected Separate Account Guaranteed Interest Contracts (SAGIC) or Capital Preservation investment options, the SVM team lead reviews and approves for accuracy the "book value" guaranteed crediting rates determined by a SVM associate prior to input into PRS and CAS, if applicable. A review for accuracy is performed to confirm the "book value" guaranteed crediting rates were entered correctly into PRS and CAS.

Defined Contribution and Defined Benefit Distributions and Payments

Any distribution or payment to a DC or DB participant must be initiated with the appropriate documentation or authorization from the participant and/or Plan Sponsor. Disbursement requests can be received in one of the following ways:

- RetireSMARTSM
- RetireSMARTSM Mobile App
- The Participant Call Center
- TRC
- Mail
- Fax
- E-mail (scanned distribution form)

Defined Contribution Distributions and Payments

DC Distributions and Payments to Plans and Participants (including Loan Payments)

Participant disbursements can be initiated through, RetireSMARTSM, the Participant Call Center or sent to MassMutual by mail, email or fax. Participants can initiate loan distributions using the RetireSMARTSM Mobile App. Plan Sponsors can also initiate participant distributions through RetireSMARTSM via the TRC. Access to all systems is controlled by a unique user identifier and a Participant Identification Number (PIN) or password.

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For access to RetireSMARTSM and TRC, failure to enter the correct RetireSMARTSM or TRC password after a predefined number of attempts will result in the user ID being locked. Participants can reset their RetireSMARTSM password by answering predefined security questions. TRC PINs require reset by authorized MassMutual personnel. The first time plan sponsors log in to the TRC, it will prompt a password change and require three security questions to be set. TRC PINs are reset by successfully answering the security questions. Effective 11/6/2019, prior to accessing RetireSMARTSM and the RetireSMARTSM Mobile App participants must pass identity proofing and authenticate using multi-factor authentication. Digital Threat Detection is also used to corroborate user identity and identify abnormal and risky behavior. If abnormal and risky behavior is identified the Fraud Surveillance team investigates this activity.

Participants that wish to call the Participant Call Center are first required to authenticate through the automated phone system before selecting a menu option to connect to the Participant Call Center. Failure to enter the correct PIN after a predefined number of attempts will result in the user ID being locked and the participant being directed to a representative at the Participant Call Center.

The Participant Call Center is comprised of the Participant Information Center (PIC) and Participant Transition Services (PTS). PTS is set up for those participants planning retirement or terminating employment. PTS and PIC share the same systems. Participant calls to the Participant Call Center are recorded. A sample of calls is reviewed daily by a quality associate for compliance with caller identity confirmation workflow, accuracy of information communicated, and customer service and customer satisfaction.

Documentation from participants and/or Plan Sponsors for distributions and payment requests received by mail, e-mail, fax or a Call Center Representative are reviewed for completeness and authorization by recordkeeping operations associates so that they can be processed within 5 business days if received in good order.

PRS is configured to detect and reject participant loan requests if certain conditions exist. PRS automatically calculates the loan amortization schedule based on the loan parameters (e.g. loan amount and repayment period) requested by the participant in accordance with plan provisions. Installment payments are setup in PRS by recordkeeping operations associates in accordance with installment instructions received and authorized by the participant and/or Plan Sponsor.

PRS automatically calculates forfeiture funds for participants not fully vested. The forfeiture funds are transferred from the participant's account to the plan forfeiture account to await sponsor instructions. The system parameters that enable the automatic transfer are setup on PRS during the plan setup process.

Disbursement transactions are independently quality reviewed based on high-risk, high value and processor experience prior to the nightly posting to PRS. Details of the disbursement transactions (including name, address, amount, authorized signature, bank routing, etc.) are reviewed to determine that they are processed completely and accurately in PRS in accordance with the documentation provided by the participant and/or Plan Sponsor.

All distributions processed through the TRC, RetireSMARTSM, RetireSMARTSM Mobile App and the Participant Call Center are combined with other transactions and posted in PRS overnight. PRS is configured to identify and log transactions that cannot be posted to the database during the nightly batch.

A web server interface program is configured to perform consistency checks to identify missing or incorrectly formatted data received from a participant through RetireSMARTSM and the RetireSMARTSM Mobile App prior to sending the information to PRS. This information must be corrected prior to it being passed to PRS. An email with a ToDo is sent to recordkeeping operations associates who follow-up and resolve unposted transactions.

Accounting operations associates review supporting documentation for individual payments over a specified amount to determine that disbursements were processed completely and accurately and in accordance with participant or Plan Sponsor instructions.

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Accounting operations associates reconcile the total number and dollar amount of checks, individual wires and the total ACH batches for disbursements processed on PRS daily to “Check Reconciliation Control Reports” provided by the Corporate Output Services. Effective 1/14/2020 a vendor Exela is responsible for the printing and mailing of checks. Discrepancies are researched and resolved.

Accounting operations associates review the list of outstanding checks provided by Financial Services Team (FST) on a semi-annual basis, assets are returned to the respective plans and letters are sent to the Plan Sponsors informing them of the actions taken by MassMutual.

Accounting operations associates perform a daily reconciliation confirming that trade activity from Fundlinx and cash activity is reconciled between the administrative recordkeeping systems (PRS and CAS), the NSCC and the custodian on the appropriate Daily Cash Suspense Reports. Discrepancies are researched and resolutions documented.

Defined Benefit Distributions, Retirements, and Payments

DB Retirement Initiations and Payments to Participants

The retirement initiation process begins when recordkeeping operations associates receive the appropriate forms from the participant. Forms are reviewed prior to processing and if any information or documentation is missing, the item is returned to the participant or plan sponsor for completion. Initiations received “not in good order” are held until all appropriate documentation is received and the initiation process can begin. All defined high complexity benefit payment calculations required by the plan Quality Review Process are reviewed by an independent team member for accuracy prior to processing.

Access to establish retirement payments in PAS is restricted to authorized recordkeeping operations associates, payments are processed in PAS or CAS only after “Election of Method of Payment” and/or “Income Tax Withholding from Non-Periodic Payments” and/or “Death Notice” forms are completed, authorized by, and received from the participant and/or direction from the Plan Sponsor is received. The documentation is reviewed by recordkeeping operations associates to determine that the disbursement requests are complete prior to entry. Payments are reviewed by an independent team member to determine that they are authorized and entered completely and accurately prior to being released into PAS and/or CAS. A record of retirement payments is established in PAS with a unique work control number. PAS automatically initiates retirement benefit payments based on the frequency established through the “Retirement Basic Data” on the PAS on-line configuration established when the retirement payment is initially set-up.

Plan Sponsors notify MassMutual of the death of a participant. However, on a monthly basis, a cumulative file is obtained from National Technical Information Service of the US Department of Commerce identifying individuals listed as deceased. This file is matched against PAS to identify active participants reported to be deceased and benefit payments are stopped.

DB Plan Distributions

Plan Distribution requests are reviewed for completeness and authorization by plan management associates prior to processing in CAS or Matrix for manual Trade Tickets only. After a request has been entered, an independent team member reviews the entry to determine it was authorized and entered completely and accurately prior to release into CAS or Matrix for manual Trade Tickets only and it is processed same day if received in good order.

Fulfillment associates (Fulfillment) compares all participant lump sum and plan distribution checks to backup documentation available in AWD.

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Defined Benefit and Defined Contribution Recordkeeping Operations System

For all DB Distributions, accounting operations associates reviews supporting documentation for individual payments over a specific amount to determine that disbursements were processed completely and accurately in accordance with authorized instructions.

Accounting operations associates reconcile the total number and dollar amount of checks reported on the Daily Cash Suspense Reports for disbursements processed on CAS to “Check Reconciliation Control Reports” provided by the Corporate Output Services. Effective 1/14/2020 a vendor Exela is responsible for checks. Discrepancies are researched and resolved.

Accounting operations associates review individual wires and the total ACH batches daily for disbursements processed on CAS to TCC. Discrepancies are researched and resolved in a timely manner.

For disbursements processed in PAS, the number of checks produced is verified daily by Fulfillment to the number on the “Check Reconciliation Control Report.” Accounting operations associates reconcile the total number and dollar amount of checks reported on the “NPAPCK1 Control Report” to the “Check Reconciliation Control Report.” Discrepancies are researched and resolutions documented.

Accounting operations associates perform a daily reconciliation confirming that trade activity from Fundlinx and cash activity is reconciled between the administrative recordkeeping systems (PRS and CAS), the NSCC and the custodian on the appropriate Daily Cash Suspense Reports. Discrepancies are researched and resolutions documented.

Effective 10/1/2019 to 12/19/2019, for certain DBIO contracts, SE2 was used to process and administer participant lump sum and repetitive payments. SE2 payments were reconciled for completeness and accuracy to the documentation received for processing. Effective 12/20/2019 all repetitive payments are processed on PAS.

Defined Contribution and Defined Benefit Contributions and Collections

DC Contributions and Collections from Plans and Participants

Contributions are allocated to participant accounts based on allocation instructions provided by the Plan Sponsor or participant in accordance with contractual guidelines and are invested based on participants' elected investment options. Contributions may include salary deferrals, company match, profit sharing allocations, rollovers, and loan repayments.

PRS prevents posting of received contributions to Plans which are not established. PRS also prevents processing of contributions entered outside of specified parameters (e.g. contract status, participant identity and effective date). PRS system configurations perform contribution reconciliations validating that the amounts input by source category (e.g. employee, employer, rollover, and loan) total to the client allocation total amount entered and prevent processing of a contribution when the amount in the holding account is not sufficient to fund the contribution file received.

Client electronically submitted contribution files go through a system validation. If the file received, the total noted by the plan sponsor and the cash received (or the auto ACH feature of the plan is turned on) all balance and there are no additional errors, the contribution will be automatically posted by PRS. Evidence of the submission is detailed as “Auto Matched” or “ACH Auto Submit Has Occurred” comment within the PRS ToDo.

Manual or electronically submitted files that do not balance, are not able to apply forfeitures systematically or that have errors are reviewed by the recordkeeping operations associates, any discrepancies are resolved, and the client is contacted if necessary. The reviews are evidenced by the submission of the PRS ToDo (client submitted TRC files) or by the “Processed” status in AWD.

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For contributions entered via the TRC, PRS is configured to generate errors when total contributions loaded do not agree with the total of the file submitted by the Plan Sponsor. Any errors in the data result in the transaction being suspended within PRS. Recordkeeping operations associates compare documentation received from Plan Sponsors to TRC reports including any suspended transactions. Discrepancies are researched and resolved; Plan Sponsors are contacted as needed.

A random selection of contribution transactions is independently quality checked after data entry but prior to the nightly posting to PRS to determine that they are processed completely and accurately in accordance with the documentation provided by the participant and/or Plan Sponsor.

Data files for contributions are uploaded to the web servers by Plan Sponsors via the TRC, Secure File Transfer Protocol (SFTP) or VPN.

All contributions processed through the TRC, RetireSMARTSM are combined with other transactions and posted in PRS overnight. PRS is configured to identify and log transactions that cannot be posted to the database during the nightly batch.

Debit ACH information is established or modified on PRS upon receipt of a form or documentation by Cashbooks and Imaging Operations (CIO). The entries are reviewed after entry into PRS by an independent team member for completeness and accuracy.

CIO associates reconcile the total amount of the Debit ACH transfers in PRS daily to the total amount of the Debit ACH transfers in the TCC. The reconciliation is reviewed by an independent team member.

Accounting operations associates reconcile the total amount of the Debit ACH transfers and lockbox receipts (checks and wires) reported on the Daily Cash Suspense Reports to the total amount of receipts in PRS as reported on the "PRS Lockbox Receipts Report." All discrepancies identified through the reconciliation processes are researched and resolved.

Accounting operations associates perform a daily reconciliation confirming that trade activity from Fundlinx and cash activity is reconciled between the administrative recordkeeping systems (PRS and CAS), the NSCC and the custodian on the appropriate Daily Cash Suspense Reports. Discrepancies are researched and resolutions documented.

DB Contributions

Contributions are allocated at the plan level based on the allocation instructions provided by the Plan Sponsor and in accordance with contractual guidelines.

CAS prevents posting of received contributions to Plans which are not established. CAS also prevents processing of contributions entered outside of specified parameters (e.g. contract status and effective date).

Contributions received through the mail, e-mail or fax are entered into CAS for manual Trade Tickets only by recordkeeping operations associates and are reviewed for accuracy of set-up after input by an independent team member and if in good order are entered within 5 business days of receipt.

Accounting operations associates reconcile the daily lockbox receipts (checks and wires) as reported on the Daily Cash Suspense Reports to the Pension Bank Reconciliation System (PBRs) for DB contributions, discrepancies are researched and resolved.

Accounting operations associates perform a daily reconciliation confirming that trade activity from Fundlinx and cash activity is reconciled between the administrative recordkeeping systems (PRS and CAS), the NSCC and the custodian on the appropriate Daily Cash Suspense Reports. Discrepancies are researched and resolutions documented.

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Defined Contribution and Defined Benefit Investment Transfers from Plans and Participants

DC Participant and Plan Investment Transfers

Participants may transfer funds between available investment options within their plan subject to specific restrictions as defined in the contract. Investment transfers requested by a participant may be received through the Participant Call Center, RetireSMARTSM or from manually completed forms mailed, e-mailed, or faxed to MassMutual. Participants can rebalance their existing investment portfolios using the RetireSMARTSM Mobile App. Plan Sponsors can also initiate participant transfers through RetireSMARTSM via the TRC. Access to all systems is controlled by a unique user identifier and a Participant Identification Number (PIN) or password. Transfers initiated through manual forms now comprise less than one half percent of total investment transfer requests received. The handling of manually submitted participant investment transfers is not included in management's description of controls.

For access to RetireSMARTSM and TRC, failure to enter the correct RetireSMARTSM or TRC password after a predefined number of attempts will result in the user ID being locked. Participants can reset their RetireSMARTSM password by answering predefined security questions. TRC passwords require reset by authorized MassMutual personnel. The first time plan sponsors log in to the TRC, it will prompt a password change and require three security questions and responses to be set. TRC passwords can be reset following the provision of correct answers to the security questions. Effective 11/6/2019, prior to accessing RetireSMARTSM and the RetireSMARTSM Mobile App participants must pass identity proofing and authenticate using multi-factor authentication. Digital Threat Detection is also used to corroborate user identity and identify abnormal and risky behavior. If abnormal and risky behavior is identified the Fraud Surveillance team investigates this activity.

Participants that wish to call the Participant Call Center are first required to authenticate through the automated phone system before selecting a menu option to connect to the Participant Call Center. Failure to enter the correct PIN after a predefined number of attempts will result in the user ID being locked and the participant being directed to a representative at the Participant Call Center.

Participant calls to the Participant Call Center are recorded. A sample of calls is reviewed daily by a quality associate basis for compliance with caller identity confirmation workflow, accuracy of information communicated, and customer service and satisfaction.

Participants making investment transfers enter the transfer percentages to and from named funds. An automated control ensures that only permitted funds can be transferred to and from and that the transferred funds add up to 100%. All participant investment transfers and rebalances processed through the TRC, RetireSMARTSM, RetireSMARTSM Mobile App and the Participant Call Center are combined with other transactions and posted in PRS overnight. PRS is configured to identify and log transactions that cannot be posted to the database during the nightly batch.

A web server interface program is configured to perform consistency checks to identify missing or incorrectly formatted data received from a participant through RetireSMARTSM and the RetireSMARTSM Mobile App prior to sending the information to PRS. This information must be corrected prior to it being passed to PRS.

For all participant investment transfers requested confirmation notifications are automatically generated. Plan Sponsors can initiate changes to their investment options by submitting an executed Services Agreement Amendment detailing their requested changes. A comprehensive checklist is executed by recordkeeping investment associates to determine plan-level investment changes are authorized and processed completely, accurately and timely. The checklist includes reviews by an independent team member at key points throughout the process. A final review of the completed checklist is performed by an independent team member to determine that required steps have been completed. MassMutual notifies

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Plan Sponsors via an addendum to the Services Agreement or other appropriate notification prior to processing a plan-level investment transfer initiated by MassMutual.

DB Plan Investment Transfers

Plans that have elected periodic rebalancing in accordance with client authorization and direction as outlined in the Services Agreement and also Investment Transfers initiated by a Plan Sponsor request are received by mail, e-mail, or fax and are reviewed for completeness and authorization by an independent team member to determine that they are in good order before processing in CAS or Matrix. An independent team member reviews the transactions after input for authorization, to determine they were processed accurately on CAS or Matrix for manual Trade Tickets only.

A master database is reviewed monthly by recordkeeping operations associates to determine that all plans that opted for periodic rebalancing were rebalanced.

Defined Contribution and Defined Benefit Compliance Testing and Plan Year End Reporting

DC Compliance Testing

MassMutual creates and sends a census to plans that utilize MassMutual Testing Services for the sponsor to validate and to update certain plan data required to perform testing. Upon receipt of the returned census from the Plan Sponsor (prior to a pre-established cut-off date), MassMutual will perform testing in advance of regulatory deadlines. A Compliance Testing & Reporting Services Database is used to facilitate tracking of the census creation, delivery to the Plan Sponsor, receipt of census returned in good order and readiness for testing. To help ensure compliance testing is performed completely and accurately, testing results are reviewed by an independent team member and documented in the CTRS Database. Completed test result letters are sent to the client. For PEO Plans utilizing Data Exchange a census is not required. The final results are communicated to the Plan or PEO Sponsor. The process is evidenced by entries in the CTRS Database and the completion of test result letters to the Plan Sponsor or notification to the PEO sponsor.

DB Compliance Testing

For DB plans which contract with MassMutual to provide annual compliance testing, the Quantitative Specialist and FSA assigned to the plan determine the plan's compliance testing requirements. Required tests are performed by a Quantitative Specialist and the results of each plan's annual compliance testing are reviewed and signed-off by an FSA prior to client communication.

DB & DC Plan Year End Reporting

For plans that utilize MassMutual Form 5500 and Schedules preparation services, a Testing Specialist (DC) or Plan Analyst (DB) reviews the 5500 Reporting Package to determine that information is complete and accurate.

Control Objectives, Related Controls, and Tests of Operating Effectiveness

The Company has specified its control objectives and identified the controls to achieve these objectives. These objectives have been determined by management of the Company by reference to, among other information sources, the AICPA Audit and Accounting Guide for Audits of Employee Benefit Plans.

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MassMutual's control objectives and related controls are included in Section IV of this report (MassMutual Control Objectives And Related Controls, and KPMG LLP's Tests Of Controls And Results of Tests of Operating Effectiveness) and are considered an integral part of MassMutual's system description set forth in Section III.

The Service Auditor has determined the nature, timing, and extent of testing to be performed. Further information on the nature, timing, and extent of testing and results of testing is contained in Section IV.

Complementary User Entity Controls

MassMutual designed its Defined Benefit and Defined Contribution Recordkeeping Operations System service operations with the assumption that certain controls would be implemented by its user entities. In certain situations, the application of specific controls at user entities is necessary to achieve certain control objectives identified in this report. In such instances, the required user entity controls are identified under the related control objective in Section IV of this report. The list of complementary user entity controls presented with certain specified control objectives does not represent a comprehensive list of all the controls that should be employed by MassMutual user entities. Other controls may be required at user entities.

Section IV
MassMutual's Control Objectives and Related Controls, and KPMG LLP's Tests of Controls and Results of Tests of Operating Effectiveness

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Work of Others

Members of MassMutual Service Organization's Financial Reporting Risk (FRR) function performed tests over a subset of the controls for the following control objectives:

- Control Objective 3: Controls provide reasonable assurance that administrative expenses are calculated and processed accurately.
- Control Objective 5: Controls provide reasonable assurance that defined contribution plan distributions and payments to participants are authorized, complete, accurate, and timely.
- Control Objective 6: Controls provide reasonable assurance that defined benefit plan distributions and payments are authorized and processed completely and accurately.

The tests performed by members of the FRR function included inquiry of relevant parties who performed the control activities, observation of the control being performed at different times during the examination period, and inspection of the documentation for a sample of transactions. No deviations were noted by members of the FRR function. KPMG tested the work of members of the FRR function through a combination of independent testing and reperformance and noted no exceptions.

Completeness and Accuracy of Information

Testing the accuracy and completeness of information provided by MassMutual is also a component of the testing procedures performed. Information produced by the entity used by KPMG may include, but is not limited to:

- Standard “out of the box” reports as configured within the system.
- Parameter driven reports generated by in-scope applications and databases.
- Custom developed reports that are not standard to the application such as scripts, report writers and queries.
- Spreadsheets that include relevant information utilized for the performance of testing a control.
- Massachusetts Mutual’s prepared analyses, schedules, or other evidence manually prepared and utilized by the Company.

While these procedures are not specifically described in the “KPMG Tests of Operating Effectiveness”, KPMG evaluated whether the information provided by MassMutual was sufficiently reliable for our purposes, including, as necessary, obtaining evidence about the completeness and accuracy of the information and evaluating whether the information was sufficiently precise and detailed for our purposes.

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DC and DB Plan Administration: Plan Installation

Control Objective 1
Controls provide reasonable assurance that plan documents are authorized and plan set-up is performed completely, accurately, and timely.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>1.1 Funds from a prior recordkeeper/investment manager are accepted and entered into PRS only after the Contract Effective Date and receipt of the authorized “Administrative Services Agreement,” the “TPA New Business Application” or the signed “Investment Agreement” from the Plan Sponsor. (DC)</p>	<p>Inspected “Administrative Services Agreements,” “TPA New Business Application”, “Investment Agreements”, and appropriate Matrix agreement and the New Business checklist for a selection of DC plans and determined that funds were only accepted from the prior recordkeeper/investment manager after the Contract Effective Date and provided there was an authorized “Administrative Services Agreement,” “TPA New Business Application” or a signed “Investment Agreement” from the Plan Sponsor.</p> <p>No Exceptions Noted.</p>
<p>1.2 Funds from a prior recordkeeper/investment manager are accepted and entered into CAS or Matrix only after the Contract/ trust document Effective Date and asset allocation instructions are received and authorized by the Plan Sponsor via an “Investment Allocation Letter,” “Services Agreement,” or appropriate Matrix agreement. (DB)</p>	<p>Inspected the “Administrative Services Agreement,” “Investment Allocation Letter” and CAS/Matrix system screenshots for a selection DB plans and determined that there was authorized documentation from the Plan Sponsor prior to accepting funds from a prior recordkeeper/investment manager.</p> <p>No Exceptions Noted.</p>
<p>1.3 Established installation timelines and documents are reviewed by new business associates to determine that plans are installed in accordance with the agreed upon timeframe. Changes and updates are documented on the installation timeline as necessary. (DB & DC)</p>	<p>Inspected installation timelines and documents for a selection of DB and DC plans and determined that the assigned Transition Manager reviewed established installation timelines and documents and determined that plans were installed in accordance with the agreed upon timeframe.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>1.4 An independent team member in the respective new business area reviews all plan information manually entered into PRS, CAS and PAS for new installations and conversions by comparing plan information to the details defined in the plan documentation. The review is evidenced on the Transition Manager Checklist for DB and in Quickbase for DC. (DB & DC)</p>	<p>Inspected Quickbase screenshots for a selection of DC plans and inspected "DB Transition Manager Checklists for a selection of DB plans and determined that an independent individual in the respective New Business area reviewed all plan information manually entered into PRS or CAS and PAS for new contracts and conversions by comparing plan information to the details defined in the plan documentation.</p> <p>No Exceptions Noted.</p>
<p>1.5 As part of the "DC New Business Account Manager Checklist" or "TPA New Business Account Managers Checklist", financial balances including allocation of transferred assets entered into PRS are reconciled to prior recordkeeper asset totals. Participant Demographic Data is reconciled by the running of an automated report to identify participant data integrity issues. Discrepancies are investigated and resolved in a timely manner. A final review of the checklist to determine that each step has been completed is performed by the manager or an independent reviewer as evidenced by signature on the applicable checklist. (DC)</p>	<p>Inspected reconciliation spreadsheet documentation and corresponding "DC New Business Account Manager Checklists" or "TPA New Business Account Managers Checklists" for a selection of DC plans, and through reperformance of the reconciliation, determined that new business compared balances in PRS to balances from the prior recordkeeper and that differences were investigated and resolved in a timely manner and a final review of the checklist to determine each step has been completed was performed by the manager or an independent reviewer.</p> <p>Inspected the same "DC New Business Account Manager Checklists" or "TPA New Business Account Managers Checklists" for a selection of DC plans and determined that a manager or an independent reviewer signed the applicable checklist to acknowledge that each step of the procedure had been completed.</p> <p>No Exceptions Noted.</p>
<p>1.6 New business associates communicate the plan requirements in the Plan Provision Guide and receives approval as evidenced by sign-off from the Plan Sponsor or by sending a Plan Provision Guide Waiver to the Plan Sponsor. (DB)</p>	<p>Inspected Plan Provision Guides or "Plan Provision Guide Waiver" for a selection of plans and determined that MassMutual received approval from Plan Sponsors.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>1.7 Validation routines are run for both active and inactive payees. The results of these validation routines are manually compared to information from the prior record keeper and provided by the Plan Sponsor to confirm that all of the data was input to LVAdmin correctly. Differences are researched, explained and corrected in a timely manner by a new business associate. The comparison of the data validation is evidenced on the "Dataload Test Plan." (DB)</p>	<p>Inspected validation routine results for a selection of DB plans and determined that validation routines were run for both active and inactive payees and saw evidence that the results were manually compared to information from the prior recordkeeper provided by the Plan Sponsor to confirm that all of the data was input to LVAdmin correctly.</p> <p>Inspected validation routine results for a selection of DB plans and determined that a new business associate researched and documented the resolution of any differences.</p> <p>No Exceptions Noted.</p>
<p>1.8 The results of test plans developed for all new plan installations are approved and signed-off on the LVAdmin "Menu Installation Test Plan" by the DB LVAdmin Manager or team lead prior to putting the plan into production. (DB)</p>	<p>Inspected the LVAdmin "Menu Installation Test Plan" and sign-off for a selection of new DB plans and determined that the results of test plans developed for the new plan installations selected were approved by the Manager of the DB LVAdmin Manager or team lead prior to putting the plan into production.</p> <p>No Exceptions Noted.</p>
<p>1.9 New business associates perform a walkthrough with the Plan Sponsor of the plan's features on the TRC including benefit calculations, and receives approval to proceed from the Plan Sponsor before RetireSMARTSM access is enabled and self-registration post cards are issued to participants via mail or e-mail, if elected by the Plan Sponsor. (DB)</p>	<p>Inspected the e-mail correspondence for a selection of DB plans and determined that a new business associate performed a walkthrough with the Plan Sponsors and received approval from the Plan Sponsors to proceed before RetireSMARTSM access was enabled and self-registration post cards were issued to participants via mail or e-mail, if elected by the Plan Sponsor.</p> <p>No Exceptions Noted.</p>
<p>1.10 Pension Automation Oversight associates review all plan information manually entered LVAdmin is reviewed by comparing plan information to the details defined in the plan documentation. (DB)</p>	<p>Inspected the LVAdmin "Menu Installation Test Plan" and sign-off for a selection of DB new contracts and conversions and determined that a Pension Automation Oversight associate reviewed plan information manually entered into LVAdmin for new contracts and conversions. Reperformed the review by comparing plan information within LVAdmin to the details defined in the plan documentation.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
1.11 Plans are reviewed for compliance with regulatory requirements by Regulatory Advisory Services as evidenced by the completion of the "Compliance Review Checklist." (DB)	Inspected the "Compliance Review Checklist" for a selection of DB plans and determined that Regulatory Advisory Services reviewed that the plans were setup in accordance with regulatory requirements. No Exceptions Noted.

Complementary User Entity Controls
<ul style="list-style-type: none"> • DB & DC Plan Sponsors should have controls in place to provide plan set up information to MassMutual completely, accurately, and timely. • DC Plan Sponsors should have controls in place to ensure that the approval of the "Administrative Services Agreement," the "TPA New Business Application" or an "Investment Agreement" was made by authorized personnel prior to MassMutual accepting funds in the setup of a new contract, contract conversion or an internal spin-off. • Plan Sponsors should have controls in place to ensure that instructions and information provided to MassMutual are in accordance with the provisions of the contract/trust document or other applicable governing agreements or documents in effect between MassMutual and the Plan Sponsor. • DB Plan Sponsors should have controls in place to ensure that the approval of an "Investment Allocation Letter" or "Services Agreement" was made by authorized personnel prior to MassMutual accepting funds in the setup of a new contract/trust document or conversion. • DB Plan Sponsors should have controls in place to review the Plan Provision Guide provided by MassMutual for completeness and accuracy of plan interpretation and notify MassMutual of any discrepancies in a timely manner. • DB Plan Sponsors should have controls in place to participate in a plan walkthrough on the TRC at which the plan's features including benefit calculations are reviewed.

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DC and DB Plan Administration: Participant and Plan Administration and Maintenance

Control Objective 2
Controls provide reasonable assurance that changes to participant and plan level indicative data are authorized, and processed completely, accurately and timely.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>2.1 Participant enrollments received by mail, e-mail, or fax are reviewed by recordkeeping operations associates prior to data entry to determine whether they are in good order (e.g. complete and authorized). The data entered is reviewed against the form or documentation received for accuracy prior to release to PRS. If received in good order they are processed with an internal goal of 5 business days of receipt, not to exceed 10 business days. The review is evidenced by "Processed" or "Passed" status in AWD. (DC)</p>	<p>Inspected enrollment documentation and AWD workflow status for a selection of Participants and determined that they were processed within 10 business days and the data entered was reviewed for authorization, completeness and accuracy by a recordkeeping operations associate prior to processing.</p> <p>No Exceptions Noted.</p>
<p>2.2 For electronic enrollments, Plan Sponsors must authenticate to the TRC using a unique ID (member ID) and password in order to submit a data file or eligible file authorizing participants for enrollment. (DC)</p>	<p>Observed a member of the Production Support Team attempt a number of unsuccessful attempts to enter a User ID and noted that they were locked out.</p> <p>Observed a member of the Production Support Team attempt to modify their password to the TRC plan sponsor portal several times using different password constructs and noted that minimum password length and structure were required.</p> <p>Observed an access attempt to TRC by a Production Support Team member and noted that they were able to reset a Password and/or User ID after first correctly answering several participant knowledge security questions.</p> <p>Inspected a system generated configuration for LDAP and determined that LDAP was configured with specific password settings including minimum password length, structure and expiration, and user ID lockout after a specified number of invalid logon attempts.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
2.3 For plans that have elected the automatic enrollment feature, participants are identified by the Plan Sponsor on a data file transmitted through the TRC and are setup in PRS upon eligibility in accordance with plan parameters (e.g. investment selections and deferral percentages). (DC)	<p>Observed application screens in PRS for a selection of plans that elected the automatic enrollment feature and noted that participants that were identified by Plan Sponsors on data files were setup in PRS in accordance with plan parameters.</p> <p>Inspected a selected data file from a plan sponsor and PRS screenshots and determined that the participant data was accurately entered into PRS.</p> <p>No Exceptions Noted.</p>
2.4 Qualified participants are added to existing plans in LVAdmin as a result of a Plan Sponsor annual census data upload via the TRC or as a result of receipt of a periodic data exchange file sent by a Plan Sponsor. (DB)	<p>Inspected annual census data files uploaded through the TRC by Plan Sponsors and periodic data exchange files transmitted by Plan Sponsors for a selection of LVAdmin contracts and determined that participants added to the plans in LVAdmin from the census data files and periodic data exchange files were qualified.</p> <p>No Exceptions Noted.</p>
2.5 Import and validation errors generated during the receipt of census and periodic data file transmissions are reviewed and resolved in a timely fashion by recordkeeping operations associates. The review and resolution are evidenced by sign-off either on the Plan Year End Checklist or the DX Log. (DB)	<p>Inspected Plan Year End Checklists or DX Logs for a selection of contracts and determined that the reviews and resolution were performed as evidenced by sign-off on the Plan Year End Checklist or the DX Log.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>2.6 Participant indicative changes received by mail, e-mail, fax or a Call Center Representative are reviewed by recordkeeping operations associates prior to data entry to determine whether they are in good order (e.g. complete and authorized). The data entered is reviewed against the form or documentation received for accuracy prior to release to PRS. If received in good order, they are processed with an internal goal of 5 business days of receipt not to exceed 10 business days. The review is evidenced by "Processed" or "Passed" status in AWD. (DC)</p>	<p>Inspected AWD workflow status for a selection of participant indicative changes and determined that requests were reviewed for completeness and authorization and signed-off by a recordkeeping operations associate and were processed within 10 business days.</p> <p>No Exceptions Noted.</p>
<p>2.7 For participant indicative requests change confirmation notifications are automatically generated. (DC)</p>	<p>Inspected the configuration of the confirmation letters for each possible indicative change and determined that participant change confirmations are configured to be automatically generated.</p> <p>No Exceptions Noted.</p>
<p>2.8 Participant indicative change requests received by mail, e-mail, or fax are reviewed by recordkeeping operations associates for completeness and authorization prior to release to PAS and are processed by the date of the next PAS check run or EFT Direct Deposit if received in good order. The entries are reviewed for accuracy by an independent team member prior to release to PAS. The reviews are evidenced by "Passed" status in AWD. (DB)</p>	<p>Inspected the change request documentation and AWD workflow for a selection of DB participant indicative changes and determined that requests were reviewed for completeness, accuracy and authorization by a recordkeeping operating associate and subsequently by an independent member of the team and were processed by the date of the next PAS check run or EFT Direct Deposit as evidenced by "Passed" status in AWD.</p> <p>No Exceptions Noted.</p>

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<p>2.9 For participants who are receiving periodic payments out of PAS, participant change confirmation notifications are automatically generated. (DB)</p>	<p>For a selection of participants inspected the automatically generated confirmation letter and system records and determined that the letter agreed to system records and was sent to participants following the processing of a participant requested change relating to address, bank, name, or beneficiary change.</p> <p>No Exceptions Noted.</p>
<p>2.10 Participants can initiate indicative changes through, RetireSMARTSM. Participants can change future investment elections using the RetireSMARTSM Mobile App. Plan Sponsors can also initiate participant indicative changes through RetireSMARTSM via the TRC. Access to all systems requires a unique user identifier and a Participant Identification Number (PIN) or password.</p> <p>Failure to enter the correct RetireSMARTSM, RetireSMARTSM Mobile App or TRC password or PIN after a predefined number of attempts will result in the user ID being locked, participants can reset their password by answering predefined security questions.</p> <p>The first time a Plan Sponsor logs into the TRC, they are prompted to enter a password change and add three security questions and answers. TRC passwords can be reset by the account holder after successfully answering the security questions.</p> <p>Effective 11/6/2019, prior to accessing RetireSMARTSM and the RetireSMARTSM Mobile App participants must pass identity proofing and authenticate using multi-factor authentication. (DB & DC)</p>	<p>Observed an attempt to sign into RetireSMARTSM, TRC, and RetireSMARTSM Mobile App and noted that the user ID will lockout after a specified number of invalid logon attempts to limit unauthorized access.</p> <p>Following lockout, observed a reset of the account password by answering a set of predefined security questions within RetireSMARTSM and TRC.</p> <p>Observed a member of ETX acting as a Plan Sponsor log into the TRC production environment for the first time and determined that they were prompted to make a password change and add three security questions and answers. Additionally, observed that TRC passwords were allowed to be reset only after successfully answering the security questions.</p> <p>Observed a series of attempts to sign into RetireSMARTSM and RetireSMARTSM Mobile App and noted that participants must pass identity proofing and authenticate using multi-factor authentication.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>2.11 Participant calls to the Participant Information Center (PIC) and Participant Transition Services (PTS) are recorded. Transaction requests and account specific information are only accepted and provided to authenticated callers. Additionally, to review for completeness, the details of the transaction are verbally confirmed with the authenticated caller. Daily a quality associate performs a review. For each review a quality review form is completed to determine proper authentication protocol was followed, the accuracy of information communicated, and any the instructions provided on the recorded call are compared to processing of the transaction in the system, and any discrepancies are researched and resolved. (DB & DC)</p>	<p>Inspected RS Call Center Review Forms for a selection of daily calls and determined that the calls were quality reviewed for compliance with caller identity confirmation workflow, accuracy of information communicated, and customer service and customer satisfaction.</p> <p>Observed the system and recorded call log and listened to a selection of recorded participant calls and determined that callers were authenticated to the Customer Service Representative.</p> <p>No Exceptions Noted.</p>
<p>2.12 A web server interface program is configured to perform consistency checks to identify missing or incorrectly formatted data received from a participant through RetireSMARTSM and the RetireSMARTSM Mobile App prior to sending the information to PRS. This information must be corrected prior to it being passed to PRS. (DB & DC)</p>	<p>Inspected instructions received through RetireSMARTSM, inspected system settings and determined that the web server interface program was configured to perform consistency checks to identify missing or incorrectly formatted data received from participants prior to sending the information to PRS.</p> <p>Observed RetireSMARTSM Mobile App system settings and determined that the web server interface program was configured to perform consistency checks to identify missing or incorrectly formatted data received from participants prior to sending the information to PRS. Further noted that only the corrected data was sent to PRS.</p> <p>No Exceptions Noted.</p>

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<p>2.13 Data files are uploaded to the web servers by Plan Sponsors through TRC, Secure File Transfer Protocol (SFTP) and VPN. A batch job moves the data from the web servers to the staging area for data exchange processing every fifteen minutes. (DB & DC)</p>	<p>Inspected the data file upload batch job and determined that it was configured to move the data from the web servers to the staging area for data exchange processing every fifteen minutes.</p> <p>Inspected the system upload configurations for a selection of data files uploaded to the web servers by Plan Sponsor and determined that they were uploaded through TRC, SFTP and VPN completely.</p> <p>No Exceptions Noted.</p>
<p>2.14 Expense changes, Executed Plan Amendments and Plan Investment changes are reviewed by recordkeeping operations associates based on predetermined criteria for authorization by the Plan Sponsor prior to being updated on PRS, CAS. Changes are reviewed by an independent team member after entry to determine they were entered completely and accurately. The reviews are evidenced by sign-off on the appropriate checklists, "Investment Change Request Checklist" (DC), or "Passed" status in AWD. (DB & DC)</p>	<p>Inspected sign-offs on the "Investment Change Request Checklist" (DC), or "Passed" AWD status for a selection of DB and DC plan changes and determined that changes were reviewed prior to entry into CAS, PRS, upon receiving authorization from the Plan Sponsor, and that plan changes made in CAS, PRS were reviewed by an independent team member after input to determine they were entered completely and accurately.</p> <p>No Exceptions Noted.</p>
<p>2.15 Indicative plan changes that impact multiple plans in response to major legislation are processed in bulk. Authorization is obtained from the impacted plans to process the changes. A quality review of the changes is performed to ensure the changes were made and processed completely and accurately. (DC & DB)</p>	<p>Inspected sign-offs on the "Request for Change in Plan Operations" survey for a selection DC and DB legislative plan changes and determined that changes were authorized for the impacted plans upon receiving authorization from the Plan Sponsor and that plan changes were reviewed by an independent team member after input to determine they were entered completely and accurately.</p> <p>No Exceptions Noted.</p>

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<p>2.16 All plan changes made in LVAdmin are reviewed by an independent team member after input to determine they were entered completely. A final review of the plan change and completed checklist to determine each step has been completed is performed by the manager or team lead. The final review is evidenced by sign-off in the "Test Plan Sign Off Tickets and Amendment Checklist." (DB)</p>	<p>Inspected the "Test Plan Sign-Off Tickets and Amendment Checklist" for a selection of plan changes made in LVAdmin and determined they were reviewed by an independent team member and approved by a manager or team lead.</p> <p>No Exceptions Noted.</p>

Complementary User Entity Controls
<ul style="list-style-type: none"> • Plan Sponsors should have controls in place to authorize and submit qualified employee enrollments to MassMutual timely and accurately. • Plan Sponsors should have controls in place to provide timely and accurate notification of relevant changes to MassMutual. • For plans that have elected the automatic enrollment feature using a data file transmitted through the TRC, Plan Sponsors should have controls in place to ensure that all participants are setup within payroll. • Plan Sponsors should have controls in place to review plans to ensure that plan changes including plan changes in response to legislative requirements submitted to MassMutual are applied accurately and processed timely. • Plan Sponsors should have controls in place to ensure only authorized customer representatives have access and are authorized to instruct MassMutual transactions and plan changes on behalf of the Plan Sponsor through the TRC and notify MassMutual of changes in a timely manner.

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DC Plan Administration: Administrative Expenses

Control Objective 3
Controls provide reasonable assurance that administrative expenses are calculated and processed accurately.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>3.1 PRS automatically calculates and bills or deducts administrative expenses from plan assets based on expense parameters set up in PRS. (DC)</p>	<p>For all expense types and a selection of contracts, inspected monthly expense statements and respective parameters within PRS, and reperformed expense charge calculations and determined that PRS correctly calculated, billed or deducted administrative expenses from plan assets. Additionally, traced the administrative fees to the PRS system to determine the administrative fee was accurately reflected in the plan.</p> <p>No Exceptions Noted.</p>

Complementary User Entity Controls

- Plan Sponsors should have controls in place to review monthly expense statements and notify MassMutual of any discrepancies.

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DC and DB Plan Administration: Defined Contribution and Defined Benefit Value Rates

Control Objective 4

Controls provide reasonable assurance that value rates are recorded completely, accurately and timely.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
4.1 For DB Participating contracts (IP, PF, DA, GA and certain IG contracts), an Fellow of the Society of Act (FSA) reviews and approves annual experience interest rates calculated using the Investment Year Method series of rates determined by an FSA prior to input into CAS. The approval and review is evidenced by sign-off on the final year end experience interest rate exhibit. (DB)	Inspected the final year end experience interest rate exhibit and supporting documentation evidencing the calculation and determined that the Investment Year Method series of rates used by an Analyst were reviewed and signed-off by a Vice President & FSA prior to input into CAS. No Exceptions Noted.
4.2 For DB Participating contracts (IP, PF, DA, GA and certain IG contracts), an independent team member reviews for accuracy the annual experience rates entered into CAS by an accounting operations associate. The review is evidenced by a sign-off on the screen print of the interest rate in CAS. (DB)	Inspected the interoffice memorandum and screen prints of the annual experience rates in CAS for a selection of contracts and determined that an independent team member had signed-off that the entry and comparison had been performed. No Exceptions Noted.
4.3 For Individually Rated GIA contracts, the Stable Value Maintenance (SVM) team lead and an FSA reviews and approves each contract's annual guaranteed crediting rate, as well as any off anniversary changes, determined by a SVM associate prior to input into PRS and CAS, if applicable. The approval and review is evidenced by sign-off on the Rate & Spread Summary or by e-mail. (DB & DC)	For a selection of contracts inspected the Individually Rated Rate & Spread Summary and supporting documentation and sign-offs, including additional approval and review by an FSA, and determined that an SVM team lead and FSA reviewed and approved the contract's guaranteed crediting rate as well as any off-anniversary changes as determined by a SVM associate prior to input into PRS and CAS. No Exceptions Noted.

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
4.4 For Individually Rated GIA contracts, an associate enters the guaranteed crediting rates into PRS and CAS, if applicable. A quality review for PRS rates is evidenced by a rate entry validation tool post data entry, with any discrepancies researched and corrections made if necessary. For DB plans an independent team member reviews the CAS entries for accuracy, the review is evidenced by "Passed" status in AWD. (DB & DC)	For a selection of contracts inspected the AWD workflow status or the entry within the validation tool and determined that an independent team member compared and signed-off on the accuracy of the guaranteed crediting rates entered into PRS through inspection of a query that was run post PRS data entry. No Exceptions Noted.
4.5 For Pooled contracts, an FSA reviews and approves annual and semi-annual guaranteed crediting rates calculated by a SVM associate prior to input into PRS. The approval and review is evidenced by distribution of an inter-office rates memo. (DB & DC)	Inspected annual and semi-annual GIA interest crediting rates calculated by a SVM associate and the annual and semi-annual inter-office rate memo on guaranteed crediting rates for a selection of New Business and Pooled contracts in PRS and determined that an FSA reviewed and approved the rates prior to their input into PRS. No Exceptions Noted.
4.6 For Pooled contracts, SVM enters the guaranteed crediting rates into PRS. A quality review is evidenced via a rate entry validation tool post entry, with any discrepancies researched and corrections made if necessary. (DB & DC)	For a selection of contracts, inspected the validation tool of Pooled contract annual and semi-annual guaranteed crediting rate renewals and determined that an independent team member confirmed the accuracy of the "book value" guaranteed crediting rates that were entered into PRS and signed off on a query that was run post PRS data entry. No Exceptions Noted.
4.7 For contracts that have elected the SAGIC or Capital Preservation investment options the SVM team lead reviews and approves for accuracy the guaranteed crediting rates calculated by a SVM associate prior to input into PRS and CAS, if applicable. The review and approval is evidenced by an email. (DB & DC)	Inspected the guaranteed crediting rates for a selection of contracts that elected the SAGIC or Capital Preservation investment option and determined that the guaranteed crediting rates that were calculated by a SVM associate were reviewed and approved prior to input into PRS through email communication. No Exceptions Noted.

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>4.8 For contracts that have elected the SAGIC or Capital Preservation investment options, an associate enters the guaranteed crediting rates into PRS and CAS, if applicable. A quality review for PRS rates is evidenced by a rate entry validation tool run post data entry with any discrepancies researched and corrections made if necessary. An independent team member reviews CAS entries for accuracy, the review is evidenced by sign-off on the periodic SAGIC Renewals, and Cap Pres Renewals Spreadsheets or by an email. (DB & DC)</p>	<p>Inspected contract documentation or the entry within the validation tool for a selection of SAGIC or Capital Preservation investment option contracts and determined that an independent team member compared for accuracy the guaranteed crediting rates that were entered into PRS and CAS and signed-off on the query that was run post PRS data entry.</p> <p>No Exceptions Noted.</p>

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DC Plan Administration: Distributions and Payments

Control Objective 5

Controls provide reasonable assurance that defined contribution plan distributions and payments to participants are authorized, complete, accurate, and timely.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>5.1 Participants can initiate disbursements through, RetireSMARTSM. Participants can initiate loans using the RetireSMARTSM Mobile App. Plan Sponsors can also initiate disbursement changes through RetireSMARTSM via the TRC. Access to all systems requires a unique user identifier and a Participant Identification Number (PIN) or password.</p> <p>Failure to enter the correct RetireSMARTSM, RetireSMARTSM Mobile App or TRC password or PIN after a predefined number of attempts will result in the user ID being locked, participants can reset their password by answering predefined security questions.</p> <p>The first time a Plan Sponsor logs into the TRC, they are prompted to enter a password change and add three security questions and answers. TRC passwords can be reset by the account holder after successfully answering the security questions.</p> <p>Effective 11/6/2019, prior to accessing RetireSMARTSM and the RetireSMARTSM Mobile App participants must pass identity proofing and authenticate using multi-factor authentication. (DC)</p>	<p>Observed a member of MassMutual attempt to sign into RetireSMARTSM, TRC, and RetireSMARTSM Mobile App and noted that the user ID will lockout after a specified number of invalid logon attempts to limit unauthorized access.</p> <p>Following lockout, observed a member of MassMutual reset the account password by answering a set of predefined security questions within RetireSMARTSM and TRC.</p> <p>Observed a member of MassMutual acting as a Plan Sponsor log into the TRC production environment for the first time and determined that they were prompted to make a password change and add three security questions and answers. Additionally, observed that TRC passwords were allowed to be reset only after successfully answering the security questions.</p> <p>Observed a series of attempts to sign into RetireSMARTSM and RetireSMARTSM Mobile App and noted that participants must pass identity proofing and authenticate using multi-factor authentication.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>5.2 Participant calls to the Participant Information Center (PIC) and Participant Transition Services (PTS) are recorded. Transaction requests and account specific information are only accepted and provided to authenticated callers. Additionally, to review for completeness, the details of the transaction are verbally confirmed with the authenticated caller. Daily a quality associate performs a review. For each review a quality review form is completed to determine proper authentication protocol was followed, the accuracy of information communicated, and any the instructions provided on the recorded call are compared to processing of the transaction in the system, and any discrepancies are researched and resolved. (DC)</p>	<p>Inspected RS Call Center Review Forms for a selection of daily calls and determined that the calls were quality reviewed for compliance with caller identity confirmation workflow, accuracy of information communicated, and customer service and customer satisfaction.</p> <p>Observed the system and recorded call log and listened to a selection of recorded participant calls and determined that callers were authenticated by the Customer Service Representative and the transactions were confirmed with the authenticated caller.</p> <p>No Exceptions Noted.</p>
<p>5.3 Distribution requests received by mail, e-mail fax or a Call Center Representative are reviewed by recordkeeping operations associates for completeness and authorization and are processed within 5 business days if received in good order (IGO). All Not In Good Order (NIGO) work is tracked in AWD and researched and resolved in a timely manner. The review is evidenced by sign-off on the documentation or by "Processed" or "Passed" status in AWD. (DC)</p>	<p>Inspected disbursement request documentation received by mail, email, fax, or a Call Center Representative and sign-offs or AWD workflow status for a selection of disbursements that were not requested through the TRC, RetireSMARTSM, RetireSMARTSM Mobile App, or the automated phone system, and determined that disbursements were authorized by the participant and/or Plan Sponsor, were reviewed and signed-off on the appropriate document/status update screen by a recordkeeping operations associate and were processed within 5 business days. For requests Not in Good Order (NIGO), inspected AWD workflow to determine that matters were researched and resolved.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>5.4 PRS is configured to detect and reject participant loan requests if the following conditions exist:</p> <ul style="list-style-type: none"> • Loan term exceeds the allowable term established for the plan. • Total loan amount exceeds 50% of the participant’s vested balance or \$50,000. Effective 3/27/2020 loans for qualified COVID-19 participants; Total loan amount exceeds 100% of the participant’s vested balance or \$100,000. • Loan amount is less than the minimum or more than the maximum allowable amount established for the plan. <p>(DC)</p>	<p>Observed the processing of a participant loan requests in the pre-production PRS test environment using different PRS plan configurations and inspected the resultant screen output and determined that the PRS plan was configured to detect and reject participant loan requests when the following conditions existed:</p> <ul style="list-style-type: none"> • loan term exceeded the allowable term established for the plan, • total loan amount exceeded 50% of the participant’s vested balance or \$50,000, • total loan amount exceeds 100% of the participant’s vested balance or \$100,000; and • the loan amount was less than the minimum or more than maximum allowable amount established for the plan. <p>No Exceptions Noted.</p>
<p>5.5 PRS automatically calculates the loan amortization schedule based on the loan parameters (e.g. maximum and minimum loan amount, repayment period and interest rate) requested by the participant in accordance with the plan provisions. (DC)</p>	<p>Observed the access of a selected participant plan in the pre-production PRS test environment and noted that the loan parameters established in PRS for that plan included the maximum and minimum loan amount, loan term, and interest rate provisions.</p> <p>Observed processing of a new loan request in the pre-production test PRS environment and inspected the PRS screen prints and determined that PRS calculated the loan amortization schedule based on the loan parameters (e.g. loan amount, repayment period and interest rate) requested via RetireSMARTSM or RetireSMARTSM Mobile App.</p> <p>No Exceptions Noted.</p>
<p>5.6 Installment payments on PRS are set up by recordkeeping operations associates in accordance with the installment instructions received from and authorized by the participant and/or Plan Sponsor. (DC)</p>	<p>Inspected the disbursement documentation received from participants and Plan Sponsors for a selection of installment payments and PRS screens and determined that they were setup on PRS in accordance with the installment instructions received from and authorized by the participant and/or Plan Sponsor.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
5.7 PRS automatically calculates forfeiture funds for participants not fully vested. The forfeiture funds are transferred from the participant's account to the plan forfeiture account to await sponsor instructions. The system parameters that enable the automatic transfer are setup on PRS during the plan setup process. (DC)	Inspected the configuration within PRS to determine that forfeiture funds are automatically calculated for participants who are not fully vested. Additionally, observed a forfeiture transaction within PRS and determined that forfeiture funds were accurately transferred from the participant's account to a plan forfeiture account. No Exceptions Noted.
5.8 Disbursement transactions are subject to an independent quality review by a recordkeeping operations associate based on high-risk and processor experience transactions. The review is done after data entry but prior to the nightly posting to PRS to determine that they are processed completely and accurately in accordance with the documentation provided by the participant and/or Plan Sponsor. The review is evidenced by "Passed" status in AWD. (DC)	Inspected a selection of disbursement reviews and determined that the disbursement transactions were independently quality checked after data entry to PRS for completeness and accuracy as evidenced by "Passed" status in AWD. No Exceptions Noted.
5.9 A Quality Team Associate performs a high-dollar-amount review for completeness and accuracy for any transaction \$500,000 or greater. (DC)	For a selection of disbursements over \$500,000, inspected the associated Reflex screens AWD history, and plan documentation and determined that a review was performed by a quality associate as evidenced by an electronic entry. No Exceptions Noted.

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>5.10 All distributions processed through the TRC, RetireSMARTSM, RetireSMARTSM Mobile App and the Participant Call Center are combined with other transactions and posted to PRS overnight.</p> <p>PRS is configured to identify and log transactions that cannot be posted to the database during the nightly batch. An e-mail with a ToDo are sent to recordkeeping operations associates who follows-up and resolves unposted transactions. (DC)</p>	<p>Observed the processing of a transaction that failed to post to the database during the nightly batch and determined that an e-mail is sent to a recordkeeping operations associate notifying them of the of the transaction that failed to post.</p> <p>Inspected a selection of To-Dos and system screenshots for unposted transactions and noted that transactions were researched and resolved.</p> <p>No Exceptions Noted.</p>
<p>5.11 A web server interface program is configured to perform consistency checks to identify missing or incorrectly formatted data received from a participant through RetireSMARTSM and the RetireSMARTSM Mobile App prior to sending the information to PRS. This information must be corrected prior to it being passed to PRS. (DC)</p>	<p>Inspected instructions received through RetireSMARTSM, inspected system settings and determined that the web server interface program was configured to perform consistency checks to identify missing or incorrectly formatted data received from participants prior to sending the information to PRS.</p> <p>Observed RetireSMARTSM Mobile App system settings and determined that the web server interface program was configured to perform consistency checks to identify missing or incorrectly formatted data received from participants prior to sending the information to PRS. Further noted that only the corrected data was sent to PRS.</p> <p>No Exceptions Noted.</p>

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<p>5.12 Accounting operations associates review supporting documentation for individual payments over \$500,000 to determine that disbursements were processed completely and accurately. The review is evidenced by an approval email and sign-off on the “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent MassMutual team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DC)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>Exception Noted.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the “GA & MR Cashbook Reconciliation & Disbursements Checklists” and Daily Financial Control & Specialty Team sign-offs for a selection of dates and payments over \$500,000 and determined that an accounting operations associate reviewed supporting documentation for individual payments over \$500,000 as evidenced by sign-off on the “GA & MR Cashbook Reconciliation & Disbursements Checklists.”</p> <p>Additionally, for each selection inspected the oversight section of the “GA & MR Cashbook Reconciliation Checklists” and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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<p>5.12 (Continued) Accounting operations associates review supporting documentation for individual payments over \$500,000 to determine that disbursements were processed completely and accurately. The review is evidenced by an approval email and sign-off on the “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent MassMutual team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DC)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management’s lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management’s supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>
<p>5.13 Accounting operations associates reconciles the total number and dollar amount of checks reported on the “GA & MR Daily Cash Suspense Reports” for disbursements processed on PRS to the “Check Reconciliation Control Report” provided by Corporate Output Services/Exela (1/14/2020). Discrepancies are researched and resolved in a timely manner. The verification is evidenced by the reconciliation calculation and by sign-off on the “Check Reconciliation Control Report.” (DC)</p>	<p>Inspected verification documentation for the disbursements processed on PRS and CAS to the “Check Reconciliation Control Report” provided by Corporate Output Services/Exela for a selection of dates and determined that an accounting operations associate verified the total number of checks and dollar amounts reported on the “GA & MR Daily Cash Suspense Reports” as evidenced by the reconciliation calculation and sign-off on the “Check Reconciliation Control Report.”</p> <p>No Exceptions Noted.</p>

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<p>5.14 Accounting operations associates review individual wires and the total ACH batches daily for disbursements processed on PRS to TCC. Adjustments to the batch totals and discrepancies are researched and resolved in a timely manner. The verification is evidenced by the reconciliation calculation and by sign-off on the on the “GA & MR Daily Cash Suspense Disbursement Reports” sections pertaining to ACH and wires. In addition, sign-off is also indicated on the “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent MassMutual team member performs a quality review evidenced in an oversight section of the same checklist to ensure the reconciliation was complete and accurate. (DC)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>Exception Noted.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the “GA & MR Daily Cash Suspense Disbursement Reports” for a selection of dates and determined that an accounting operations associate verification of ACH and of wires was evidenced by the reconciliation calculation and sign-off on the on the “& MR Daily Cash Suspense Disbursement Reports” respectively.</p> <p>Additionally, for each selection inspected the oversight section of the “GA & MR Cashbook Reconciliation & Disbursements Checklists” and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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<p>5.14 (Continued) Accounting operations associates review individual wires and the total ACH batches daily for disbursements processed on PRS to TCC. Adjustments to the batch totals and discrepancies are researched and resolved in a timely manner. The verification is evidenced by the reconciliation calculation and by sign-off on the on the “GA & MR Daily Cash Suspense Disbursement Reports” sections pertaining to ACH and wires. In addition, sign-off is also indicated on the “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent MassMutual team member performs a quality review evidenced in an oversight section of the same checklist to ensure the reconciliation was complete and accurate. (DC)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management’s lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management’s supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>
<p>5.15 Accounting operations associates reviews the list of outstanding checks from Financial Services Team (FST) on a semi-annual basis and provides the list of outstanding checks to the Account Managers. Cashbooks and Imaging Operations (CIO) returns the assets to the respective plans and fulfillment associates send informative letters to the Plan Sponsors informing them of the actions taken by MassMutual. (DC)</p>	<p>Inspected a semi-annual listing of outstanding checks, supporting Plan Sponsor informative correspondence for a selection of the outstanding checks and Account Transaction reports and determined that a semi-annual review over outstanding checks was conducted and that fulfillment associates sent informative letters to Plan Sponsors and that a CIO associate returned the assets to the respective plans.</p> <p>No Exceptions Noted.</p>

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<p>5.16 Accounting operations associates reconcile on a daily basis that trade activity from Fundlinx equals cash activity as fed from the administrative recordkeeping systems (CAS and PRS). The reconciliation is documented on the “GA & MR Daily Cash Suspense Reports” and discrepancies are researched and resolved. The verification is evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB & DC)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>Exception Noted.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the “GA & MR Daily Cash Suspense Report” for a selection of dates and determined that an accounting operations associate verified that trade activity from Fundlinx equaled cash activity as fed from the administrative recordkeeping systems (CAS and PRS). Also determined that the reconciliation was documented on the “GA & MR Daily Cash Suspense Reports” and that a verification review was evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursement Checklists.”</p> <p>Additionally, KPMG inspected the oversight section of the “GA & MR Cashbook Reconciliation & Disbursements Checklists” and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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<p>5.16 (Continued) Accounting operations associates reconcile on a daily basis that trade activity from Fundlinx equals cash activity as fed from the administrative recordkeeping systems (CAS and PRS). The reconciliation is documented on the “GA & MR Daily Cash Suspense Reports” and discrepancies are researched and resolved. The verification is evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB & DC)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management’s lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management’s supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>

Complementary User Entity Controls
<ul style="list-style-type: none"> • Plan Sponsors should have controls in place to provide complete and properly authorized distribution requests to MassMutual. • Plan Sponsors should have controls in place to ensure only authorized customer representatives have access and are authorized to instruct MassMutual transactions on behalf of the Plan Sponsor through the TRC and notify MassMutual of changes in a timely manner. • Plan Sponsors should have controls in place to provide complete and properly authorized contribution and loan repayment information to MassMutual in accordance with their specific plan's requirements/criteria.

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DB Plan Administration: Distributions and Payments

Control Objective 6
Controls provide reasonable assurance that defined benefit plan distributions and payments are authorized and processed completely, accurately and timely.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
6.1 All defined high complexity benefit payment calculations required by the Quality Review Process are reviewed by independent recordkeeping operations team member for accuracy prior to processing. The review is evidenced by "Passed" status in AWD. (DB)	<p>Inspected the AWD workflow for a selection of high complexity benefit payments identified as a result of the plan Quality Review sign-off and determined that payment calculations were reviewed by an independent recordkeeping operations team member and were evidenced by "Passed" status in AWD.</p> <p>No Exceptions Noted.</p>
6.2 Access to establish retirement payments in PAS is restricted to authorized recordkeeping operations associates. (DB)	<p>Inspected an access list of personnel with the ability to establish payments in PAS to determine whether access to establish retirement payments in PAS was restricted to authorized personnel. Noted that 3 of the 19 personnel (total population) with access to establish payments were not recordkeeping operations associates.</p> <p>Exceptions Noted.</p> <p>Management Response:</p> <p>Management performed a lookback assessment for the 3 identified users during the period (10/1/2019-9/30/2020) and determined that the users did not establish any retirement payments in PAS. This exception was due to the lack of communication by the PAS staff to the access team when these users transferred within the organization. The access authorization policy has been reinforced with PAS staff responsible for maintaining and monitoring application access credentials.</p> <p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management's lookback documentation from 10/1/2019-9/30/2020 and determined that the three users did not establish any retirement payments.</p>

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<p>6.3 Benefit payment documentation is reviewed by recordkeeping operations associates and processed in PAS and/or CAS only after "Election of Method of Payment" and/or "Income Tax Withholding from Non-Periodic Payments" and/or "Death Notice" forms are completed, authorized by, and received from the participant and/or direction from the Plan Sponsor is received. Payments are reviewed for accuracy by an independent team member prior to release to PAS and or CAS (if a lump sum payment is requested). The review is evidenced by "Passed" status in AWD. (DB)</p>	<p>Inspected the "Election of Method of Payment" and/or "Income Tax Withholding from Non-Periodic Payments" and "Death Notice" forms, AWD workflow and PAS and CAS records for a selection of disbursement requests and determined that retirement payments were processed in PAS and CAS (if lump sum payment is requested) only after payment election and income tax information forms were completed and authorized by the participant.</p> <p>Inspected AWD workflow screens for a selection of payment request and determined that payments were reviewed for accuracy by an independent team member prior to release into PAS and CAS (if lump sum payment is requested) as evidenced by "Passed" status in AWD.</p> <p>No Exceptions Noted.</p>
<p>6.4 Plan Payments are reviewed by plan management associates prior to processing in CAS or Matrix only after complete and authorized direction is received from an authorized party such as a Plan Sponsor or their delegate. Payments are reviewed for accuracy by an independent team member prior to entry into CAS and are processed same day if in good order. The review is evidenced by "Passed" status in AWD or signature on the CAS report generated for the day. (DB)</p>	<p>Inspected the plan payment requests and the AWD workflow status or signature on the CAS/Matrix report generated for the day for a selection of plan payments and determined that plan payments were reviewed by a plan management associate prior to processing in CAS/Matrix for completeness and authorization.</p> <p>Inspected AWD workflow screens for a selection of plan payment request and determined that payments were reviewed by an independent team member for accuracy prior to release to CAS/Matrix.</p> <p>No Exceptions Noted.</p>

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6.5 Fulfillment associates compare all participant lump sum and plan distribution checks to backup documentation in AWD. The review is evidenced in AWD by status "Mailed" for Participant Lump Sums and "Check Sent" or "Fulfilled" for plan disbursements. (DB)	Inspected a selection of lump sum and plan distribution checks and compared them to the applicable AWD workflow and determined that an independent review by Fulfillment was performed as evidenced in AWD by status "Mailed" for Participant Lump Sums and "Check Sent" by or "Fulfilled" for plan disbursements. No Exceptions Noted.
6.6 A record of retirement payments is established in PAS with a unique work control number initiated by the entry of a participant's social security number by recordkeeping operations associates. (DB)	Observed a recordkeeping operations associate enter a participant social security number in PAS and noted they automatically received a system generated unique control number in PAS. No Exceptions Noted.
6.7 PAS automatically initiates retirement benefit payments based on the frequency established through the "Retirement Basic Data" on the PAS on-line configuration established when the retirement payment is initially set-up by a recordkeeping operations associates. (DB)	Inspected the "Retirement Basic Data" in the PAS on-line configuration and the Payment Inquiry screen for payment frequency history for a selected payment and determined that PAS initiated retirement payments based on the frequency initially established. No Exceptions Noted.
6.8 Monthly cumulative Social Security Death Files are compared against participant records in PAS to identify any deceased persons who may still retain an active account in PAS. Matching participant accounts will have a stop payment applied in PAS by recordkeeping operations associates to discontinue benefit payment. (DB)	Inspected MassMutual PAS Match Listing of deceased persons (obtained by matching the "Social Security Death File" against active PAS accounts) and PAS Screen prints for a selection of deceased persons and months and determined that the matching participant accounts had stopped payment status applied in PAS to discontinue benefit payments. No Exceptions Noted.

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<p>6.9 Accounting operations associates review supporting documentation for individual payments over \$500,000 to determine that disbursements were processed completely and accurately. The review is evidenced by sign-off on the “GA Cashbook Reconciliation & Disbursements Checklist.” An independent MassMutual team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>Exceptions Noted.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the “GA Cashbook Reconciliation & Disbursements Checklist” for a selection of dates and determined that an accounting operations associate reviewed supporting documentation for individual payments over \$500,000 to source documentation and determined that the payment was authorized and approved by a DB Manager or their designate.</p> <p>Additionally, inspected the oversight section of the “GA Cashbook Reconciliation & Disbursements Checklist” and source documentation and determined that a quality review of the reconciliations were performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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<p>6.9 (Continued) Accounting operations associates review supporting documentation for individual payments over \$500,000 to determine that disbursements were processed completely and accurately. The review is evidenced by sign-off on the "GA Cashbook Reconciliation & Disbursements Checklist." An independent MassMutual team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management's lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management's supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>
<p>6.10 Accounting operations associates reconciles the total number and dollar amount of checks reported on the "GA Daily Cash Suspense Report" for disbursements processed on CAS to the "Check Reconciliation Control Report" provided by Corporate Output Services. Discrepancies are researched and resolved in a timely manner. The verification is evidenced by the reconciliation calculation and by sign-off on the "Check Reconciliation Control Report." (DB)</p>	<p>Inspected verification documentation for PRS and CAS disbursements to the "Check Reconciliation Control Report" provided by Corporate Output Services for a selection of dates and determined that an accounting operations associate verified the total number and dollar amount of checks reported on the "GA Daily Cash Suspense Report" as evidenced by the reconciliation calculation and sign-off on the "Check Reconciliation Control Report."</p> <p>No Exceptions Noted.</p>

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<p>6.11 Accounting operations associates review individual wires and the total ACH batches daily for disbursements processed on CAS to TCC. Adjustments to the batch totals and discrepancies are researched and resolved in a timely manner. The verification is evidenced by the reconciliation calculation and by sign-off on the on the “GA Daily Cash Suspense Disbursement Report” sections pertaining to ACH and wires. In addition, sign-off is also indicated on the “GA Cashbook Reconciliation & Disbursements Checklist.” An independent team member performs a quality review evidenced in an oversight section of the same checklist. (DB)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>Exceptions Noted.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the “GA Daily Cash Suspense Disbursement Report” for a selection of dates and determined that an accounting operations associate reviewed individual wires and the total ACH batches processed on CAS and TCC as evidenced by the reconciliation and sign-off on the on the “GA Cashbook Reconciliation & Disbursements Checklist “Additionally, inspected the oversight section of the “GA Cashbook Reconciliation & Disbursements Checklist “and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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<p>6.11 (Continued) Accounting operations associates review individual wires and the total ACH batches daily for disbursements processed on CAS to TCC. Adjustments to the batch totals and discrepancies are researched and resolved in a timely manner. The verification is evidenced by the reconciliation calculation and by sign-off on the on the “GA Daily Cash Suspense Disbursement Report” sections pertaining to ACH and wires. In addition, sign-off is also indicated on the “GA Cashbook Reconciliation & Disbursements Checklist.” An independent team member performs a quality review evidenced in an oversight section of the same checklist. (DB)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management’s lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management’s supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>

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<p>6.12 Fulfillment reconciles disbursements processed in PAS. The number of checks produced is verified daily to the number on the "Check Reconciliation Control Report" and discrepancies are researched and resolved. The verification is evidenced by sign-off on the "Check Reconciliation Control Report."</p> <p>Accounting operations associates verify the total number and dollar amount of checks reported on the "NPAPCK1 Control Report" to the "Check Reconciliation Control Report." Discrepancies are researched and resolved. The verification is evidenced by sign-off on the "NPAPCK1 Control Report." "In addition, sign-off is also indicated on the "PAS Cashbook Reconciliation Checklist." An independent team member performs a quality review evidenced in an oversight section of the same checklist to ensure the reconciliation was complete and accurate. (DB)</p>	<p>Inspected the "Check Reconciliation Control Report" for a selection of days and determined that Fulfillment verified daily the disbursements processed in PAS with the number of checks produced as indicated on the "Check Reconciliation Control Report" and that discrepancies were researched, and resolutions documented. Verification was evidenced by sign-off on the "Check Reconciliation Control Report."</p> <p>Inspected the "NPAPCK1 Control Report" for a selection of days and compared it to the "Check Reconciliation Control Report" and determined that discrepancies were researched, and resolutions documented with verification evidenced by sign-off on the "NPAPCK1 Control Report."</p> <p>Additionally, inspected the oversight section of the "PAS Cashbook Reconciliation Checklist" and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>No Exceptions Noted.</p>

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<p>6.13 Accounting operations associates reconcile on a daily basis that trade activity from Fundlinx equals cash activity as fed from the administrative recordkeeping systems (CAS and PRS). The reconciliation is documented on the “GA & MR Daily Cash Suspense Reports” and discrepancies are researched and resolved. The verification is evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>Exception Noted.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the “GA & MR Daily Cash Suspense Report” for a selection of dates and determined that an accounting operations associate verified that trade activity from Fundlinx equaled cash activity as fed from the administrative recordkeeping systems (CAS and PRS). Also determined that the reconciliation was documented on the “GA & MR Daily Cash Suspense Reports” and that a verification review was evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursement Checklists.”</p> <p>Additionally, KPMG inspected the oversight section of the “GA & MR Cashbook Reconciliation & Disbursements Checklists” and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>6.13 (Continued) Accounting operations associates reconcile on a daily basis that trade activity from Fundlinx equals cash activity as fed from the administrative recordkeeping systems (CAS and PRS). The reconciliation is documented on the “GA & MR Daily Cash Suspense Reports” and discrepancies are researched and resolved. The verification is evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management’s lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management’s supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>
<p>6.14 Effective 10/1/2019 to 12/19/2019, on a daily basis, a Daily Participant Payment Report was generated directly from the SE2 site to obtain the lump sum payments processed for the prior day. The payment information on the report is compared to the open items in AWD for completeness and accuracy to the documentation received for processing and the payment is entered into CAS using the SE2 payment date. The process is reviewed for accuracy by an independent team member as evidenced by "Passed" status in AWD. Any discrepancies are resolved with SE2.</p> <p>Effective 12/20/2019 all repetitive payments are processed on PAS. (DB)</p>	<p>Inspected the “Daily Participant Payment Report” and AWD workflow screens for a selection of days from 10/1/2019 through 12/19/2019 to determine that they were reviewed for completeness and accuracy to the documentation received for processing and that the payment was entered into CAS using the SE2 payment date. Additionally, determined that any discrepancies were researched and resolved.</p> <p>No Exceptions Noted.</p>

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<p>6.15 Effective 10/1/2019 to 12/19/2019, on a monthly basis, a Takeover Report was generated directly from the SE2 site to obtain the annuity payments processed for the month. A report is generated from CAS to obtain the nightly entries sent from SE2 for annuity payments, which are automatically withdrawn from CAS, for the month. These reports are compared to the open items in AWD for completeness and accuracy to the documentation received for processing to confirm the amount in the auto feed from SE2 to CAS matches the form and the setup is correct in the SE2 site for payments going forward. The review is evidenced by a "Completed" status in AWD. Any discrepancies are resolved with SE2.</p> <p>Effective 12/20/2019 all repetitive payments are processed on PAS. (DB)</p>	<p>Inspected the "Takeover Report" and AWD workflow screens for a selection of months from 10/1/2019 through 12/19/2019 to determine that they were reviewed for completeness and accuracy to the documentation received for processing. Additionally, determined that any discrepancies were researched and resolved.</p> <p>No Exceptions Noted.</p>

Complementary User Entity Controls
<ul style="list-style-type: none"> • Plan Sponsors should have controls in place to ensure that the retirement initiation forms are complete and accurate prior to submitting the forms to MassMutual. • Plan sponsors should have controls in place to ensure a review is performed to verify the accuracy of payments. If an error does occur timely notification to MassMutual is required.

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DC and DB Plan Administration: Contributions

Control Objective 7
Controls provide reasonable assurance that contributions and collections are processed completely, accurately and timely.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
7.1 CAS and PRS have edit checks that prevent posting of received contributions to Plans which are not established. (DB & DC)	<p>Observed the error message generated in CAS upon an attempted posting of DB contributions to a Plan which was not established and noted that CAS prevented posting of received contributions to Plans which were not established.</p> <p>Observed the error message in PRS generated upon an attempted posting of DC contributions to a Plan which was not established and noted that PRS prevented posting of received contributions to Plans which were not established.</p> <p>No Exceptions Noted.</p>
7.2 CAS and PRS have edit checks including contract status, participant identity, effective date, and contribution reconciliation that prevent processing of contributions entered outside of specified parameters. (DB & DC)	<p>Observed in CAS, the real-time error messages generated by CAS upon the attempted processing of a DB contribution to a fund outside of plan parameters and noted that CAS prevented processing of DB contributions entered outside of specified parameters.</p> <p>Observed in PRS, the error messages generated upon the attempted processing of a DC contribution to an account outside of plan parameters and noted that PRS prevented processing of DC contributions entered outside of specified parameters.</p> <p>No Exceptions Noted.</p>
7.3 PRS system configurations validate that the amounts input by source category (i.e. employee, employer, rollover and loan) total to the client allocation total amount entered and prevents processing of a contribution when the amount in the holding account is not sufficient to fund the contribution file received. (DC)	<p>Observed entry of a contribution allocation to a selected contract and noted that the PRS system checked that the amounts input by source category totaled the client allocation total entered or displayed a discrepancy when they did not.</p> <p>Observed an attempt to make a contribution allocation to a selected contract when the holding account was not sufficient to fund the contribution file received and noted that the allocation was prevented.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>7.4 Client electronically submitted contribution files go through a system validation. If the file received, the total noted by the plan sponsor and the cash received (or the auto ACH feature of the plan is turned on) all balance and there are no additional errors, the contribution will be automatically posted by PRS. Evidence of the submission is detailed as “Auto Matched” or “ACH Auto Submit Has Occurred” comment within the PRS ToDo.</p> <p>Manual or electronically submitted files that do not balance, are not able to apply forfeitures systematically or have errors are reviewed by recordkeeping operations associates, any discrepancies are resolved, and the client is contacted if necessary. The reviews are evidenced by the submission of the PRS ToDo (client submitted TRC files) or by the “Processed” status in AWD</p> <p>Contributions in good order are processed within 5 business days of receipt. (DC)</p>	<p>Inspected the authorized allocation instructions and system transaction logs or appropriate AWD status for a selection of DC contributions and determined that a recordkeeping operations associate reviewed data entry using supporting customer authorized allocation instructions received through the mail, e-mail or fax for completeness and accuracy prior to processing the transaction within 5 business days of receipt if received in good order.</p> <p>For each selection, inspected supporting documentation and determined that the contribution file was automatically submitted when the total noted by the plan sponsor, the file received, and the cash matched, as evidenced by the “Auto Matched” comment within the PRS ToDo.</p> <p>For a selection of ACH plans that were out of balance, inspected evidence of research and resolution, and determined that a recordkeeping operations associate verified the control totals prior to submitting the ACH.</p> <p>Observed the TRC contribution file system validation and noted that the contribution would post automatically provided the control totals balanced and the plan auto ACH feature was turned on.</p> <p>No Exceptions Noted.</p>
<p>7.5 PRS is configured to generate errors when total contributions loaded to the TRC do not agree to the total of the file submitted by the Plan Sponsor. Discrepancies greater than \$1 are researched and resolved as documented on a PRS online ToDo entry or supporting e-mail. (DC)</p>	<p>Inspected TRC screenshots and contributions loaded by a recordkeeping operations associate on a TRC production copy and determined that PRS was configured to identify contribution errors when total contributions loaded in TRC did not agree to the total file submitted by the Plan Sponsor.</p> <p>Inspected supporting review documentation and the PRS on-line ToDo entries or supporting e-mails for a selection of contribution errors and determined that a recordkeeping operations associate compared customer source documentation received from the Plan Sponsors to TRC reports and researched and resolved discrepancies.</p> <p>No Exceptions Noted.</p>

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<p>7.6 Contribution transactions are subject to an independent quality review by a recordkeeping operations associate based on pre-determined sampling parameters established in AWD. The review is done after data entry but prior to the nightly posting to PRS to determine that they are processed completely and accurately in accordance with the documentation provided by the participant and/or Plan Sponsor. The review is evidenced by "Passed" status in AWD. (DC)</p>	<p>Inspected contribution documentation and PRS screenshots, and AWD workflow screens for a selection of contribution transactions that were independently quality checked after data entry, but prior to nightly posting and determined that they were processed completely and in accordance with documentation provide by the participant or plan sponsor.</p> <p>No Exceptions Noted.</p>
<p>7.7 Data files are uploaded to the web servers by Plan Sponsors via the TRC, Secure File Transfer Protocol (SFTP) and VPN. A batch job moves the data from the web servers to the staging area for data exchange processing every fifteen minutes. (DC)</p>	<p>Inspected the system upload configurations for a selection of data files uploaded to the web servers by Plan Sponsor and determined that they were uploaded via the TRC, through SFTP, and VPN.</p> <p>Inspected the data file upload batch job and determined that it was configured to move the data from the web servers to the staging area for data exchange processing every fifteen minutes.</p> <p>No Exceptions Noted.</p>
<p>7.8 All contributions processed through the TRC are combined with other transactions and posted to PRS overnight.</p> <p>PRS is configured to identify and log transactions that cannot be posted to the database during the nightly batch. An e-mail and ToDo is sent to recordkeeping operations associates who follows-up and resolves unposted transactions. (DC)</p>	<p>Observed the processing of a transaction that failed to post to the database during the nightly batch and determined that an e-mail and ToDo was sent to recordkeeping operations associates to notifying them of the transaction that failed to post.</p> <p>Inspected a selection of To-Dos and system screenshots for unposted transactions and noted that transactions were researched and resolved.</p> <p>No Exceptions Noted.</p>

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<p>7.9 CIO associates establish or modify Debit ACH information on PRS upon receipt of a form or documentation received from the Account Manager. The entries are reviewed after entry into PRS by an independent team member for completeness and accuracy. The review is evidenced in AWD by assignment to the independent team member and them moving the work item to "Processed." (DC)</p>	<p>Inspected the "Comments" field in AWD and screen shots from PRS for a selection of new and changed Debit ACH requests and determined that an independent team member reviewed them for completeness and accuracy.</p> <p>No Exceptions Noted.</p>
<p>7.10 CIO associates reconcile the total amount of the Debit ACH transfers in PRS daily to the total amount of the Debit ACH transfers in TCC. Discrepancies are researched and resolved in a timely manner. The reconciliation is reviewed by an independent team member and evidenced by sign-off on the reconciliation worksheets and the "ACH Batch Request List" print screens. (DC)</p>	<p>For a selection of days, inspected the PRS system daily transfer amounts and compared amounts to the total amount of the Debit ACH transfers in TCC and determined that a CIO associate performed the reconciliation as evidenced on the reconciliation worksheets and by a sign-off on the "ACH Batch Request List" print screen. In addition, re-performed the reconciliation of the selection and determined that they were correctly calculated. Inspected reconciliation worksheets and "ACH Batch Request List" to determine that the reconciliation was performed by an independent team member.</p> <p>No Exceptions Noted.</p>

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<p>7.11 Accounting operations associates reconcile the total amount of the Debit ACH transfers and lockbox receipts (checks and wires) reported on the “Daily Cash Suspense Report” to the total amount of receipts in PRS as reported on the “PRS Lockbox Receipts Report.” Discrepancies are researched and resolved in a timely manner. The reconciliation is evidenced on reconciliation sheets and by sign-off on the “GA & MR Cashbook Reconciliation & Disbursement Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DC)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the corresponding “GA & MR Cashbook Reconciliation & Disbursement Checklists” and Financial Operations Analysis & Metrics Team sign-offs for a selection of dates and determined that a reconciliation was performed by an accounting operations associate between the total amount of the Debit ACH transfers and lockbox receipts reported on the “Daily Cash Suspense Report” to the total amount of receipts in PRS as reported on the “PRS Lockbox Receipts Report” and that discrepancies were researched and resolutions documented.</p> <p>Additionally, inspected the oversight section of the “GA & MR Cashbook Reconciliation & Disbursement Checklist” and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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<p>7.11 (Continued) Accounting operations associates reconcile the total amount of the Debit ACH transfers and lockbox receipts (checks and wires) reported on the “Daily Cash Suspense Report” to the total amount of receipts in PRS as reported on the “PRS Lockbox Receipts Report.” Discrepancies are researched and resolved in a timely manner. The reconciliation is evidenced on reconciliation sheets and by sign-off on the “GA & MR Cashbook Reconciliation & Disbursement Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DC)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management’s lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management’s supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>
<p>7.12 Contribution instructions received through the mail, e-mail or fax are entered into CAS by recordkeeping operations associates and are reviewed for accuracy of entry after input by an independent team member and if in good order are entered within 5 business days of receipt. The post-entry review is evidenced by “Passed” status in AWD or signature on the CAS report generated for the day. (DB)</p>	<p>Inspected supporting authorized contribution instructions received through the mail, e-mail or fax and the a recordkeeping operations associate sign-offs, system transaction logs or appropriate AWD quality control status for a selection of DB contributions and determined that an independent team member reviewed the accuracy of entry prior to processing the contribution transactions within 5 business days if received in good order.</p> <p>No Exceptions Noted.</p>

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<p>7.13 Accounting operations associates reconcile the daily lockbox receipts (checks and wires) as reported on the “GA Daily Cash Suspense Report” to PBRs for DB contributions. Discrepancies are researched and resolved. The reconciliation is evidenced by sign-off on the “GA Cashbook Reconciliation & Disbursement Checklist.” An independent team member performs a quality review evidenced in an oversight section of the same checklist to ensure the reconciliation was complete and accurate. (DB)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>1/1/2020-9/30/2020</p> <p>For a selection of dates, inspected and reperformed the reconciliation performed on the “GA Cashbook Reconciliation & Disbursement Checklist” and determined that they were performed completely and accurately. Also, inspected supporting documentation and determined that all discrepancies were researched and resolved.</p> <p>Additionally, inspected the oversight section of the “GA Cashbook Reconciliation & Disbursement Checklist” and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>7.13 (Continued) Accounting operations associates reconcile the daily lockbox receipts (checks and wires) as reported on the "GA Daily Cash Suspense Report" to PBRS for DB contributions. Discrepancies are researched and resolved. The reconciliation is evidenced by sign-off on the "GA Cashbook Reconciliation & Disbursement Checklist." An independent team member performs a quality review evidenced in an oversight section of the same checklist to ensure the reconciliation was complete and accurate. (DB)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management's lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management's supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>7.14 Accounting operations associates reconcile on a daily basis that trade activity from Fundlinx equals cash activity as fed from the administrative recordkeeping systems (CAS and PRS). The reconciliation is documented on the “GA & MR Daily Cash Suspense Reports” and discrepancies are researched and resolved. The verification is evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB & DC)</p>	<p>10/1/2019-12/31/2019</p> <p>Inquired of management and was informed that the control was not operating effectively from 10/1/2019-12/31/2019.</p> <p>Exception Noted.</p> <p>1/1/2020-9/30/2020</p> <p>Inspected the “GA & MR Daily Cash Suspense Report” for a selection of dates and determined that an accounting operations associate verified that trade activity from Fundlinx equaled cash activity as fed from the administrative recordkeeping systems (CAS and PRS). Also determined that the reconciliation was documented on the “GA & MR Daily Cash Suspense Reports” and that a verification review was evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursement Checklists.”</p> <p>Additionally, KPMG inspected the oversight section of the “GA & MR Cashbook Reconciliation & Disbursements Checklists” and source documentation and determined that a quality review of the reconciliation was performed completely and accurately by an independent team member.</p> <p>Management Response:</p> <p>As part of an internal control review, it was identified that reconciliations were performed but not independently reviewed for a selection of days during the period of 10/1/2019-12/31/2019. This exception was due to the manual nature of the control as the reconciliations were not automatically sent to the independent reviewers which resulted in gaps where the independent review of reconciliations were not reviewed on a daily basis. As of 12/31/2019, the policy has been reinforced with the associates that perform the independent review.</p> <p>Management performed a lookback assessment during the gap period (10/1/2019-12/31/2019) by examining all the daily checklists and determined that there was a total of 59 reconciliations that were not independently reviewed. For the 59 reconciliations identified, management performed a retroactive independent review and determined that the reconciliation was performed completely and accurately. In addition, management determined that no adjustments were necessary as a result of the lookback assessment.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>7.14 (Continued) Accounting operations associates reconcile on a daily basis that trade activity from Fundlinx equals cash activity as fed from the administrative recordkeeping systems (CAS and PRS). The reconciliation is documented on the “GA & MR Daily Cash Suspense Reports” and discrepancies are researched and resolved. The verification is evidenced on the daily “GA & MR Cashbook Reconciliation & Disbursements Checklists.” An independent team member performs a quality review evidenced in an oversight section of the same checklists to ensure the reconciliation was complete and accurate. (DB & DC)</p>	<p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management’s lookback documentation from 10/1/2019-12/31/2019 and determined that management identified 59 reconciliations that were not independently quality reviewed. For the 59 reconciliations, inspected the LAN folder containing management’s supporting evidence and retroactive review and determined whether the quality review was completed. For a selection of 5 of the 59 reconciliations, KPMG reperformed the applicable steps on the checklist and inspected the retroactive review to determine that the reconciliation had been completed and the review was documented on the checklist.</p>

Complementary User Entity Controls
<ul style="list-style-type: none"> • Plan Sponsors should have controls in place to review their Financial Reports and notify MassMutual in a timely manner if a contribution is not received or discrepancies are identified. • Plan Sponsors should have controls in place to provide complete, properly authorized and timely contribution and loan repayment information to MassMutual in accordance with their specific plan’s requirements/criteria. • Plan Sponsors should have controls in place to ensure only authorized customer representatives have access and are authorized to instruct MassMutual transactions on behalf of the Plan Sponsor through the TRC and notify MassMutual of changes in a timely manner.

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DC and DB Plan Administration: Investment Changes

Control Objective 8

Controls provide reasonable assurance that participant and plan investment transfers are authorized and processed completely and accurately.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>8.1 Participants can initiate investment transfers through, RetireSMARTSM or the Participant Call Center. Participants can rebalance their existing investment portfolios using the RetireSMARTSM Mobile App. Plan Sponsors can also initiate participant transfer changes through RetireSMARTSM via the TRC. Access to all systems requires a unique user identifier and a Participant Identification Number (PIN) or password.</p> <p>Failure to enter the correct RetireSMARTSM, RetireSMARTSM Mobile App or TRC password or PIN after a predefined number of attempts will result in the user ID being locked, participants can reset their password by answering predefined security questions.</p> <p>The first time a Plan Sponsor logs into the TRC, they are prompted to enter a password change and add three security questions and answers. TRC passwords can be reset by the account holder after successfully answering the security questions.</p> <p>Effective 11/6/2019, prior to accessing RetireSMARTSM and the RetireSMARTSM Mobile App participants must pass identity proofing and authenticate using multi-factor authentication. (DB & DC)</p>	<p>Observed a member of the MassMutual System Support Team attempt to access the Automated Phone System and noted that when the caller's PIN was entered incorrectly multiple times, the caller was directed to the Participant Call Center.</p> <p>Observed a member of MassMutual attempt to sign into RetireSMARTSM, TRC, and RetireSMARTSM Mobile App and noted that the user ID will lockout after a specified number of invalid logon attempts to limit unauthorized access.</p> <p>Following lockout, observed a member of MassMutual reset the account passwords by answering a set of predefined security questions within RetireSMARTSM and TRC.</p> <p>Observed a member of MassMutual acting as a Plan Sponsor logging into the TRC production environment for the first time and determined that they were prompted to make a password change and add three security questions and answers. Additionally, observed that TRC passwords were allowed to be reset only after successfully answering the security questions.</p> <p>Observed a series of attempts to sign into RetireSMARTSM and RetireSMARTSM Mobile App and noted that participants must pass identity proofing and authenticate using multi-factor authentication.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>8.2 Participant calls to the Participant Information Center (PIC) and Participant Transition Services (PTS) are recorded. Transaction requests and account specific information are only accepted and provided to authenticated callers. Additionally, to review for completeness, the details of the transaction are verbally confirmed with the authenticated caller. Daily a quality associate performs a review. For each review a quality review form is completed to determine proper authentication protocol was followed, the accuracy of information communicated, and any the instructions provided on the recorded call are compared to processing of the transaction in the system, and any discrepancies are researched and resolved. (DC)</p>	<p>Inspected RS Call Center Review Forms for a selection of daily calls and determined that the calls were quality reviewed for compliance with caller identity confirmation workflow, accuracy of information communicated, customer service and customer satisfaction.</p> <p>Observed the system and recorded call log and listened to a selection of recorded participant calls and determined that callers were authenticated to the Customer Service Representative.</p> <p>No Exceptions Noted.</p>
<p>8.3 All participant investment transfers processed through the TRC, RetireSMARTSM, RetireSMARTSM Mobile App and the Participant Call Center are combined with other transactions and posted to PRS overnight.</p> <p>PRS is also configured to identify and log transactions that cannot be posted to the database during the nightly batch. An e-mail and ToDo is sent to recordkeeping operations associates who follows-up and resolves unposted transactions. (DC)</p>	<p>Observed the processing of a transaction that failed posting to the database during the nightly batch and determined that an e-mail is sent to a recordkeeping operations associate notifying them of the transaction that failed to post.</p> <p>Inspected a selection of To-Dos and system screenshots for unposted transactions and noted that transactions were researched and resolved.</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>8.4 A web server interface program is configured to perform consistency checks to identify missing or incorrectly formatted data received from a participant through RetireSMARTSM, and RetireSMARTSM Mobile App prior to sending the information to PRS. This information must be corrected prior to it being passed to PRS. (DC)</p>	<p>Inspected instructions received through RetireSMARTSM, inspected system settings and determined that the web server interface program was configured to perform consistency checks to identify missing or incorrectly formatted data received from participants prior to sending the information to PRS.</p> <p>Observed RetireSMARTSM Mobile App system setting and determined that the web server interface program was configured to perform consistent checks to identify missing or incorrectly formatted data received from participants prior to sending the information to PRS. Further noted only correct data was sent to PRS.</p> <p>No Exceptions Noted.</p>
<p>8.5 For participant investment transfers confirmation notifications are automatically generated. (DC)</p>	<p>Inspected an investment transfer and associated PRS screen prints and determined that a transfer request confirmation letter was generated and sent for mailing on the same date as the request was processed and the information on the confirmation was accurate.</p> <p>No Exceptions Noted.</p>
<p>8.6 A checklist is executed by recordkeeping investment associates to help ensure plan-level investment changes are authorized by the Plan Sponsor and processed completely, accurately and timely. A final review of the completed checklist is performed by an independent team member to determine each required step has been completed. The review is evidenced on the "Investment Change Checklist." (DC)</p>	<p>Inspected the "Investment Change Checklist" for a selection of plan-level transfers and determined that checklists were executed by a recordkeeping investment associate to help ensure plan-level investment transfers were authorized by the Plan Sponsor and processed completely, accurately, and timely. It was further determined that a final review of each completed checklist was performed by an independent team member to ensure that each step was completed and was evidenced by sign-off on the "Investment Change Checklist."</p> <p>No Exceptions Noted.</p>

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Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>8.7 Plans that have elected periodic rebalancing in accordance with client authorization and direction as outlined in the Services Agreement and also Investment Transfer requests initiated by a Plan Sponsor received by mail, e-mail, or fax and are reviewed by recordkeeping operations associates for completeness and authorization to determine that they are in good order before processing in CAS. An independent team member reviews the transactions after input for authorization to determine they were processed accurately on CAS or Matrix for manual Trade Tickets only. The review is evidenced by "Passed" status in AWD. (DB)</p>	<p>For a selection of plan-level investment transfers and rebalancing transactions, inspected the Services Agreement and AWD QC status and determined that rebalancing transactions or investment transfers were entered into CAS/Matrix by a recordkeeping operations associate and an independent member of the team reviewed the transactions after input for authorization and completeness as evidenced by a "Passed" status in AWD.</p> <p>No Exceptions Noted.</p>
<p>8.8 Recordkeeping operations associates review monthly the master re-balancing database for plans that require rebalancing to determine that all plans that required rebalancing were rebalanced as evidenced by a completion date in the database for each plan. (DB)</p>	<p>Inspected Plan Re-balancing Tracking Logs for a selection of months and determined that a recordkeeping operations associate reviewed monthly the master re-balancing database for plans that required rebalancing as evidenced by a completion date entered in the master database against the plan.</p> <p>No Exceptions Noted.</p>

Complementary User Entity Controls
<ul style="list-style-type: none"> • Plan Sponsors should have controls in place to ensure that transfer requests submitted for processing are complete and properly authorized. • Plan Sponsors should have controls in place to ensure only authorized customer representatives have access and are authorized to instruct MassMutual transactions on behalf of the Plan Sponsor through the TRC and notify MassMutual of changes in a timely manner.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations System

DC and DB Plan Administration: Compliance Testing and Plan Year End Reporting

Control Objective 9

Controls provide reasonable assurance that Plan required compliance tests and annual reports are compiled completely and accurately.

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>9.1 For plans that utilize MassMutual Testing Services, a census is created and provided to the Plan Sponsor. The completed census is returned and reviewed for completeness and provided it is in good order, testing against specified requirements such as plan limits and excess deferments is performed by a testing operations associates. An independent team member reviews the returned census and the testing for completeness and accuracy. For PEO Plans utilizing Data Exchange a census is not required. The final results are communicated to the Plan or PEO Sponsor. The process is evidenced by entries in the Compliance Testing and Reporting Service (CTRS) Database and the completion of test result letters to the Plan Sponsor or notifications to the PEO Sponsor. (DC)</p>	<p>Inspected the screen print of CTRS Database for selected plans and determined that the annual compliance testing was performed by a testing operations associate, and that the testing results were reviewed by an independent team member for completeness and accuracy as evidenced by entries in the CTRS Database. In addition, inspected test result letters and determined that the final results were communicated to the Plan Sponsor.</p> <p>For PEO plans utilizing Data Exchange, inspected CTRS data base and test result letters for a selection of plans and determined that the final results were communicated to the Plan or PEO sponsor.</p> <p>No Exceptions Noted.</p>
<p>9.2 For plans which are contracted with MassMutual to provide annual compliance testing, an FSA reviews and signs-off on each plan's annual compliance testing results prepared by a Quantitative Specialist. The review is evidenced by the FSA's sign-off on the "Plan Year Testing Results" letter sent to Plan Sponsors. (DB)</p>	<p>Inspected a selection of the "Plan Year Testing Results" letters for a selection of eligible plans and determined that an FSA reviewed and signed-off on each plan's annual compliance testing results that were prepared by a Quantitative Specialist as evidenced by the FSA's sign-off on the "Plan Year Testing Results" letter.</p> <p>No Exceptions Noted.</p>

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations System

Controls Specified by MassMutual Business	Testing Performed by KPMG LLP and Results of Tests
<p>9.3 For plans that utilize MassMutual Form 5500 and Schedules preparation services, a Testing Specialist (DC) or Plan Analyst (DB) reviews the 5500 Reporting Package to determine that the schedules and attachments are complete. The DC review is evidenced by entries in the CTRS Database. The DB review is evidenced by entries in the Class listings and notification by email to the FSA. (DB & DC)</p>	<p>Inspected the annual Form 5500 reporting package (DB) and entries in the CTRS Database (DC) for sign-offs and associated 5500 Summary Action Lists if applicable for a selection of eligible plans, and determined that a Testing Specialist (DC) or Plan Analyst (DB) reviewed the 5500 Reporting Package to determine that information was complete as evidenced by entries in the CTRS Database for DC plans and evidenced by entries in the class listings and notification by email to the FSA for DB plans.</p> <p>No Exceptions Noted.</p>

Complementary User Entity Controls
<ul style="list-style-type: none"> • Plan Sponsors should have controls in place to return a complete and accurate plan census questionnaire to MassMutual. • Plan Sponsors should have controls in place to for ensure that they receive and review test results and authorizing any necessary correcting action. Plan Sponsors are responsible for reviewing the annual financial reports provided by MassMutual to determine whether the reports are complete and accurate. Any changes needed should be reported timely to MassMutual.

Section V
Other Information Provided by MassMutual

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Operations System

Business Continuity Planning

MassMutual's recovery strategy is focused on diversification. Data Center recovery utilizes capabilities in other states, currently Colorado intended to protect against the impact from regional disasters and multiple replication/backup technologies are used to protect against hardware failure. Workspace recovery is available within multiple MassMutual-owned buildings in Massachusetts and Connecticut, many of which have generator backup and diverse paths for network and utilities.

The primary Data Center in Massachusetts has been outfitted with an uninterruptible power supply (UPS) and N+1 generation capacity. Should there be a larger issue, systems are backed up to MassMutual-owned hardware in Colorado (1700 miles away). MassMutual's home office in Springfield has also been backed up with generators; capable of powering around 3,700 workstations, more than we believe would be needed for the first 30 days of a recovery event. If workspace becomes unavailable in the MassMutual home office in Springfield or the office in Enfield, Connecticut, employees may be relocated to the office not impacted or may work remotely. MassMutual has established critical operations and workspace outside of its home office region in Boston, New York, and Phoenix.

MassMutual maintains a continuity planning program that is intended to address, among other things, facility/systems failure due to cyber threats, pandemics and third party outages. MassMutual's business continuity program was born out of Business Impact Analysis (BIA) results. MassMutual has opted to keep BIA results live within the body of the business continuity plan, requiring that information to be reviewed at least semi-annually and as there are changes within the business line. Company policy states that all business functions must be covered by a business continuity plan that is maintained in the Company's web-based planning tool.

MassMutual maintains three types of technical continuity plans: Application, Infrastructure and Processor. Recovery Time Objectives and Recovery Point Objectives are governed by business continuity plan priorities. Essential applications are generally replicated using near-real-time replication to Colorado while non-essential applications are backed up using virtual tape backup to Colorado. Essential applications are generally restored in less than 24 hours. By policy, all technology in the Data Center must be covered by the appropriate technical continuity plan in the Company's web-based planning tool.

Emergency response testing is done throughout the year and includes Crisis Management Team simulations, evacuation drills and exercising of specialized plans, such as Pandemic Response, Customer Disaster Response, Aircraft Incident and others. Information Technology disaster recovery testing is conducted on an annual basis and includes essential applications and a rotation of non-essential applications. Finally, business continuity testing is conducted throughout the year and includes annual testing through an online simulator, division-level simulations, tabletop walkthroughs and participation in the annual IT disaster recovery test. In addition to planned testing, internal auditors have an active role in auditing continuity plans and test results across the Company. When potential issues are identified, such issues are documented, assigned an owner and tracked through to completion. Plan maintenance is handled through regularly scheduled reviews. Continuity plans and the hardware/application inventory in the Company's Configuration Management Database are validated annually. Finally, ongoing reviews are conducted throughout the year to ensure all processes and technology items are covered by continuity plans and to ensure they meet the Company's Guiding Principles framework within the company policy for recovery prioritization.

Technical Support Teams provide support for continuity of critical business operations 24x7x365.

MassMutual's Office of Enterprise Resilience annually reviews the Business Continuity and Disaster Recovery plans for critical third parties.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution Recordkeeping Operations System

Pandemic Planning at MassMutual and impact of COVID-19

MassMutual has maintained a Pandemic Response Plan for over 15 years. The plan is organized in three phases: Monitoring, Partial Activation and Full Activation and utilizes specific trigger events to direct the actions that will be put in place for each phase. Because MassMutual is a global firm, the plan does allow for different operating locations to be in different phases depending on what is happening in a given region. This plan was utilized in the current COVID-19 crisis and directed the actions as the event evolved in the US and around the world.

MassMutual has been able to effectively respond to the challenges caused by COVID-19. Over 98% of the workforce was transitioned to work-from-home beginning in March 2020, before any known cases were identified in the workforce. Collaboration tools, largely electronic workflows, and a robust IT infrastructure have helped to ensure the workforce remains productive and able to process transactions. In Q1 and Q2 2020, MassMutual responded to the requirements of the CARES act passed by congress and modified systems and processes, where appropriate, to meet customer needs. MassMutual continues to closely monitor the situation and is prepared to adjust as the pandemic evolves. Despite the devastation caused by this terrible disease globally, MassMutual continues to operate from a position of strength and has been able to maintain effective controls across all lines of business.

COVID-19 Impact on Internal Controls

The coronavirus pandemic (COVID-19) has had minimal impact on control activities within the scope for this report. In addition, the pandemic has had little impact on the services we provide our members and employers. The majority of services can be conducted remotely, and that has allowed us to safeguard the health and well-being of our staff, our members and our participating employers. Despite the disruption COVID-19 has caused to the economy, we have continued to distribute benefit payments on time, process retirement and withdrawal applications, and maintain our technological infrastructure with no lapse in service. MassMutual continues to monitor internal controls, including controls that have been temporarily adjusted during the pandemic, to ensure they are operating effectively.





**Defined Benefit and Defined Contribution Recordkeeping
Operations General Information Technology Controls System**

System and Organization Controls (SOC 1[®]) Report

**Applicable to Proprietary Recordkeeping (PRS), Case Accounting
(CAS), Participant Accounting (PAS), Investment Service
Operations, FIS OMNI Recordkeeping (OMNI) and DST TRAC
Recordkeeping (TRAC) Systems for the period October 1, 2019
through September 30, 2020**

**Massachusetts Mutual Life Insurance Company
Defined Benefit and Defined Contribution Recordkeeping Operations
General Information Technology Controls System**

System and Organization Controls (SOC 1®) Report

Applicable to Proprietary Recordkeeping (PRS), Case Accounting (CAS), Participant Accounting (PAS), Investment Service Operations, FIS OMNI Recordkeeping (OMNI) and DST TRAC Recordkeeping (TRAC) Systems for the period October 1, 2019 through September 30, 2020

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Section I
Independent Service Auditor's Report provided by
KPMG LLP



KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Service Auditor's Report

To the Management of Massachusetts Mutual Life Insurance Company

Scope

We have examined Massachusetts Mutual Life Insurance Company's (MassMutual or the Company) description of its system entitled "Description of the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System" to provide support for the MassMutual business units for processing their user entities' transactions throughout the period October 1, 2019 to September 30, 2020 (the description) and the suitability of the design and operating effectiveness of the controls included in the description to achieve the related control objectives stated in the description, based on the criteria identified in the "MassMutual's Assertion" (the assertion). The controls and control objectives included in the description are those that management of MassMutual believes are likely to be relevant to user entities' internal control over financial reporting, and the description does not include those aspects of the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System that are not likely to be relevant to user entities' internal control over financial reporting.

The information included in Section V, "Other Information Provided by MassMutual", is presented by management of MassMutual to provide additional information and is not a part of MassMutual's description of its Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System made available to user entities during the period October 1, 2019 to September 30, 2020. Information about MassMutual's business continuity planning and the impact of COVID-19 has not been subjected to the procedures applied in the examination of the description of the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System and of the suitability of the design and operating effectiveness of controls to achieve the related control objectives stated in the description of the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System and, accordingly, we express no opinion upon it.

MassMutual uses the subservice organizations identified in Section III to perform some of the services provided to user entities that are likely to be relevant to those user entities' internal control over financial reporting. The description includes only the control objectives and related controls of MassMutual and excludes the control objectives and related controls of the subservice organization. The description also indicates that certain control objectives specified by MassMutual can be achieved only if complementary subservice organization controls assumed in the design of MassMutual's controls are suitably designed and operating effectively, along with the related controls at MassMutual. Our examination did not extend to controls of the subservice organization and we have not evaluated the suitability of the design or operating effectiveness of such complementary subservice organization controls.

The description indicates that certain control objectives specified in the description can be achieved only if complementary user entity controls assumed in the design of MassMutual's controls are suitably designed and operating effectively, along with related controls at MassMutual. Our examination did not extend to such complementary user entity controls, and we have not evaluated the suitability of the design or operating effectiveness of such complementary user entity controls.



Service Organization's Responsibilities

In Section II, MassMutual has provided an assertion about the fairness of the presentation of the description and suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description. MassMutual is responsible for preparing the description and its assertion, including the completeness, accuracy, and method of presentation of the description and assertion, providing the services covered by the description, specifying the control objectives and stating them in the description, identifying the risks that threaten the achievement of the control objectives, selecting the criteria stated in the assertion, and designing, implementing, and documenting controls that are suitably designed and operating effectively to achieve the related control objectives stated in the description.

Service Auditor's Responsibilities

Our responsibility is to express an opinion on the fairness of the presentation of the description and on the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of CPAs. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether, in all material respects, based on the criteria in management's assertion, the description is fairly presented and the controls were suitably designed and operating effectively to achieve the related control objectives stated in the description throughout the period October 1, 2019 to September 30, 2020. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

An examination of a description of a service organization's system and the suitability of the design and operating effectiveness of controls involves:

- performing procedures to obtain evidence about the fairness of the presentation of the description and the suitability of the design and operating effectiveness of the controls to achieve the related control objectives stated in the description, based on the criteria in management's assertion,
- assessing the risks that the description is not fairly presented and that the controls were not suitably designed or operating effectively to achieve the related control objectives stated in the description,
- testing the operating effectiveness of those controls that management considers necessary to provide reasonable assurance that the related control objectives stated in the description were achieved,
- evaluating the overall presentation of the description, suitability of the control objectives stated in the description, and suitability of the criteria specified by the service organization in its assertion.

Inherent Limitations

The description is prepared to meet the common needs of a broad range of user entities and their auditors who audit and report on user entities' financial statements and may not, therefore, include every aspect of the system that each individual user entity may consider important in its own particular environment. Because of their nature, controls at a service organization may not prevent, or detect and correct, all misstatements in processing or reporting transactions or identification of the function performed by the system. Also, the projection to the future of any evaluation of the fairness of the presentation of the description, or conclusions about the suitability of the design or operating effectiveness of the controls to achieve the related control objectives stated in the description is subject to the risk that controls at a service organization may become ineffective.



Description of Tests of Controls

The specific controls tested and the nature, timing, and results of those tests are listed in Section IV.

Opinion

In our opinion, in all material respects, based on the criteria described in MassMutual's assertion:

- the description fairly presents the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System that was designed and implemented throughout the period October 1, 2019 to September 30, 2020;
- the controls related to the control objectives stated in the description were suitably designed to provide reasonable assurance that the control objectives would be achieved if the controls operated effectively throughout the period October 1, 2019 to September 30, 2020, and the subservice organization and user entities applied the complementary controls assumed in the design of MassMutual's controls throughout the period October 1, 2019 to September 30, 2020; and
- the controls operated effectively to provide reasonable assurance that the control objectives stated in the description were achieved throughout the period October 1, 2019 to September 30, 2020 if complementary subservice organization and user entity controls, assumed in the design of MassMutual's controls, operated effectively throughout the period October 1, 2019 to September 30, 2020.

Restricted Use

This report, including the description of tests of controls and results thereof in Section IV, is intended solely for the information and use of management of MassMutual, user entities of MassMutual's Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System during some or all of the period October 1, 2019 to September 30, 2020, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by user entities themselves, when assessing the risks of material misstatement of user entities' financial statements. This report is not intended to be and should not be used by anyone other than these specified parties.

KPMG LLP

November 19, 2020
New York, NY

Section II
MassMutual's Management Assertion



Massachusetts Mutual Life Insurance Company
1295 State Street
Springfield, MA 01111

MassMutual's Assertion

November 19, 2020

We have prepared the description of Massachusetts Mutual Life Insurance Company's (MassMutual or the Company) system entitled, "Description of the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System," to provide support for the MassMutual business units for processing their user entities' transactions throughout the period October 1, 2019 to September 30, 2020 (description) for user entities of the system during some or all of the period October 1, 2019 to September 30, 2020, and their auditors who audit and report on such user entities' financial statements or internal control over financial reporting and have a sufficient understanding to consider it, along with other information, including information about controls implemented by the subservice organization and user entities of the system themselves, when assessing the risks of material misstatement of user entities' financial statements.

MassMutual uses the subservice organizations identified in Section III to perform some of the services provided to user entities that are likely to be relevant to those user entities' internal control over financial reporting. The description includes only the control objectives and related controls of MassMutual and excludes the control objectives and related controls of the subservice organizations. The description also indicates that certain control objectives specified in the description can be achieved only if complementary subservice organization controls assumed in the design of our controls are suitably designed and operating effectively along with the related controls at MassMutual. The description does not extend to controls of the subservice organizations.

The description indicates that certain control objectives specified in the description can be achieved only if complementary user entity controls assumed in the design of MassMutual's controls are suitably designed and operating effectively, along with related controls at MassMutual. The description does not extend to controls of the user entities.

We confirm, to the best of our knowledge and belief, that:

- a) The description fairly presents the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System made available to user entities of the system during some or all of the period October 1, 2019 to September 30, 2020 for processing their transactions as it relates to controls that are likely to be relevant to user entities' internal control over financial reporting. The criteria we used in making this assertion were that the description
 - i. presents how the system made available to user entities of the system was designed and implemented to process relevant user entity transactions, including, if applicable,
 - (1) the types of services provided, including, as appropriate, the classes of transactions processed;
 - (2) the procedures, within both automated and manual systems, by which those services are provided, including, as appropriate, procedures by which transactions are initiated, authorized, recorded, processed, corrected as necessary, and transferred to the reports and other information prepared for user entities of the system;
 - (3) the information used in the performance of the procedures, including, if applicable, related accounting records, whether electronic or manual, and supporting information

involved in initiating, authorizing, recording, processing, and reporting transactions; this includes the correction of incorrect information and how information is transferred to the reports and other information prepared for user entities;

- (4) how the system captures and addresses significant events and conditions other than transactions;
 - (5) the process used to prepare reports and other information for user entities;
 - (6) services performed by a subservice organization, if any, including whether the carve out method or the inclusive method has been used in relation to them;
 - (7) the specified control objectives and controls designed to achieve those objectives, including, as applicable, complementary user entity controls and complementary subservice organization controls assumed in the design of the service organization's controls;
 - (8) other aspects of our control environment, risk assessment process, information and communications (including the related business processes), control activities and monitoring activities that are relevant to the services provided.
- ii. includes relevant details of changes to MassMutual's system during the period covered by the description.
 - iii. does not omit or distort information relevant to MassMutual's system, while acknowledging that the description is prepared to meet the common needs of a broad range of user entities of the system and their auditors, and may not, therefore, include every aspect of the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System that each individual user entity of the system and its auditor may consider important in its own particular environment.
- b) The controls related to the control objectives stated in the description were suitably designed and operating effectively throughout the period October 1, 2019 to September 30, 2020 to achieve those control objectives if the subservice organization and user entities applied the complementary controls assumed in the design of MassMutual's controls throughout the period October 1, 2019 to September 30, 2020. The criteria we used in making this assertion were that:
- i. the risks that threaten the achievement of the control objectives stated in the description have been identified by management of MassMutual;
 - ii. the controls identified in the description would, if operating effectively, provide reasonable assurance that those risks would not prevent the control objectives stated in the description from being achieved; and
 - iii. the controls were consistently applied as designed, including whether manual controls were applied by individuals who have the appropriate competence and authority.

Massachusetts Mutual Life Insurance Company

Section III
**Description of the Defined Benefit and Defined
Contribution Recordkeeping Operations General
Information Technology Controls System**

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations

Description of the Defined Benefit and Defined Contribution Recordkeeping Operations General Information Technology Controls System

Scope of the Report

This report was prepared according to the American Institute of Certified Public Accountants standards and related interpretations.

This report was developed by the Massachusetts Mutual Life Insurance Company (MassMutual or the Company) management to communicate General Information Technology Controls (GITC) supported by the Enterprise Technology and Experience business unit (ETX) applicable to recordkeeping operations services provided by MassMutual to its Defined Benefit (DB) and Defined Contribution (DC) clients that have plans supported on the Proprietary Recordkeeping System (PRS), Case Accounting System (CAS), and Participant Accounting System (PAS), Investment Service Operations and DC only clients supported on the FIS OMNI and DST TRAC recordkeeping systems.

This report documents MassMutual's description of its GITC system applicable to DB and DC Recordkeeping Operations systems for the period October 1, 2019 to September 30, 2020.

The scope of this report covers MassMutual's General Information Technology Controls system and includes control objectives and controls related to Application Change Management, System Software Change Management, Physical Security and Environmental Controls, Logical Security, Job Processing and Data Transmissions for the period October 1, 2019 through September 30, 2020.

MassMutual's SOC 1® reports that address the business process control objectives associated with DB and DC Recordkeeping Operations using the PRS, CAS, PAS, and Investment Service Operations systems for the period October 1, 2019 through September 30, 2020, DC Recordkeeping Operations using the OMNI and TRAC systems for the period October 1, 2019 through September 30, 2020 are available to MassMutual clients and their auditors.

Background

MassMutual is a provider of defined contribution, defined benefit, and nonqualified deferred compensation retirement products and services for corporate, union, Professional Employer Organizations (PEO), nonprofit and governmental customers across the United States. MassMutual offers a full range of products and services – from plan administration to customer communications – designed to simplify a complex business. Solutions are provided through retirement plan professionals, consultants, and third-party administrators. MassMutual has three primary service models:

- DC full service investment and recordkeeping for profit sharing, money purchase, 401(k), 457 governmental and 403(b) plans.
- DC investment and/or recordkeeping for 401(k) plans administered by Third-Party Administrators. Controls associated with the services provided by TPAs are not part of this SOC 1® report examination.
- DB services for traditional plans and nontraditional plans such as cash balance plans and floor offset arrangements. The variety of services offered includes actuarial valuation, benefit calculation, and payment, consulting services and Form 5500 preparation.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations

MassMutual's performance reflects a combination of more than 65 years of experience, investment management expertise, and innovative technology with personalized services. It offers a full range of products and services for corporate, union, nonprofit and governmental employers' defined benefit, defined contribution and nonqualified deferred compensation plans. It serves approximately 2.6 million participants. Communication with customers and participants has become essential. Participants seek to better understand their retirement plans and capabilities, and plan sponsors and retirement professionals seek to be better informed about regulatory issues and ways they can help participants prepare for retirement. MassMutual is committed to developing and delivering results-driven communications that are designed to meet the needs of all of its customers.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations

Complementary Subservice Organization Controls (CSOCs)

MassMutual's systems and the controls over DB and DC Recordkeeping Operations system processing were designed with the assumption that certain control objectives can be achieved only if the CSOCs are implemented by the subservice organizations. The description includes only the controls and related control objectives of MassMutual and excludes the control objectives and related controls of the subservice organizations. The application of such CSOCs by subservice organizations support the achievement of control objectives identified in this report. The subservice organization control considerations presented below should not be regarded as a comprehensive list of all of the controls that should be employed by the subservice organizations.

Subservice Organization	Services Provided	Related Control Objective	Complementary Subservice Organization Controls (CSOCs)
DST	<p>TRAC (Software-as-a-Service) DC Recordkeeping system used by MassMutual DC Midmarket Corporate clients. Software-as-a-Service is a subscription based software distribution model in which TRAC, a multi-tenant application, is developed, hosted and maintained centrally by DST and made available to MassMutual and other clients over the Internet.</p> <p>Automated Work Distribution (AWD) system used by MassMutual automates the handling and distribution of hardcopy client and participant documents. AWD is hosted and maintained centrally by DST and made available to MassMutual. DST's services are limited to System Software Change Management, Physical Security and Environmental Controls.</p>	<p>Control Objective 1 Application Change Management</p> <p>Control Objective 2 System Software Change Management</p> <p>Control Objective 3 Physical Security and Environmental Controls</p> <p>Control Objective 4 Logical Access</p> <p>Control Objective 5 Job Processing</p> <p>Control Objective 6 Data Transmissions</p>	<p>CO 1 and CO 2-DST should have controls to ensure that application/software development and application/software changes made to existing applications are documented, authorized, tested and approved for implementation.</p> <p>CO 3-DST should have controls over physical security and environmental protection of computer equipment and storage media.</p> <p>CO 4-DST should have controls over provisioning, termination, and recertification of TRAC and AWD user access.</p> <p>CO 5-DST should have controls over the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule.</p> <p>CO 6-DST should have controls over the completion and security of data transmissions, and identification and resolution of failures.</p>

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations

Subservice Organization	Services Provided	Related Control Objective	Complementary Subservice Organization Controls (CSOCs)
Matrix	<p>Matrix Financial Solutions (Software-as-a-Service) used by MassMutual DB Midmarket Corporate clients for trust and investment services. Software-as-a-Service is a subscription based software distribution model in which Matrix, a multi-tenant application, is developed, hosted and maintained centrally by Matrix and made available to MassMutual and other clients over the Internet.</p>	<p>Control Objective 1 Application Change Management</p> <p>Control Objective 2 System Software Change Management</p> <p>Control Objective 3 Physical Security and Environmental Controls</p> <p>Control Objective 4 Logical Access</p> <p>Control Objective 5 Job Processing</p> <p>Control Objective 6 Data Transmissions</p>	<p>CO 1 and CO 2-Matrix should have controls to ensure that application/software development and application/software changes made to existing applications are documented, authorized, tested and approved for implementation.</p> <p>CO 3-Matrix should have controls over physical security and environmental protection of computer equipment and storage media.</p> <p>CO 4-Matrix should have controls over provisioning, termination, and recertification of user access.</p> <p>CO 5-Matrix should have controls over the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule.</p> <p>CO 6-Matrix should have controls over the completion and security of data transmissions, and identification and resolution of failures.</p>

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Subservice Organization	Services Provided	Related Control Objective	Complementary Subservice Organization Controls (CSOCs)
FIS	<p>OMNI (Software-as-a-Service) used by MassMutual DC Midmarket Corporate clients as the primary application supporting the DC Recordkeeping Operations system. Software-as-a-Service is a subscription based software distribution model in which OMNI is developed, hosted and maintained centrally by FIS and made available to MassMutual and other clients over the Internet.</p>	<p>Control Objective 1 Application Change Management</p> <p>Control Objective 2 System Software Change Management</p> <p>Control Objective 3 Physical Security and Environmental Controls</p> <p>Control Objective 4 Logical Access</p> <p>Control Objective 5 Job Processing</p> <p>Control Objective 6 Data Transmissions</p>	<p>CO 1 and CO 2-FIS should have controls to ensure that application/software development and application/software changes made to existing applications are documented, authorized, tested and approved for implementation.</p> <p>CO 3-FIS should have controls over physical security and environmental protection of computer equipment and storage media.</p> <p>CO 4-FIS should have controls over provisioning, termination, and recertification of user access.</p> <p>CO 5-FIS should have controls over the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule.</p> <p>CO 6-FIS should have controls over the completion and security of data transmissions, and identification and resolution of failures.</p>

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Subservice Organization	Services Provided	Related Control Objective	Complementary Subservice Organization Controls (CSOCs)
SSC	<p>State Street Corporation (SSC) is used for pricing calculations for portfolio investment accounts.</p>	<p>Control Objective 1 Application Change Management</p> <p>Control Objective 2 System Software Change Management</p> <p>Control Objective 3 Physical Security and Environmental Controls</p> <p>Control Objective 4 Logical Access</p> <p>Control Objective 5 Job Processing</p> <p>Control Objective 6 Data Transmissions</p>	<p>CO 1 and CO 2-SSC should have controls to ensure that application/software development and application/software changes made to existing applications are documented, authorized, tested and approved for implementation.</p> <p>CO 3-SSC should have controls over physical security and environmental protection of computer equipment and storage media.</p> <p>CO 4-SSC should have controls over provisioning, termination, and recertification of user access.</p> <p>CO 5-SSC should have controls over the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule.</p> <p>CO 6-SSC should have controls over the completion and security of data transmissions, and identification and resolution of failures.</p>

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Subservice Organization	Services Provided	Related Control Objective	Complementary Subservice Organization Controls (CSOCs)
RTC	<p>Reliance Trust (RTC) is used for pricing calculations for unitized plans' customized investments.</p>	<p>Control Objective 1 Application Change Management</p> <p>Control Objective 2 System Software Change Management</p> <p>Control Objective 3 Physical Security and Environmental Controls</p> <p>Control Objective 4 Logical Access</p> <p>Control Objective 5 Job Processing</p> <p>Control Objective 6 Data Transmissions</p>	<p>CO 1 and CO 2-RTC should have controls to ensure that application/software development and application/software changes made to existing applications are documented, authorized, tested and approved for implementation.</p> <p>CO 3-RTC should have controls over physical security and environmental protection of computer equipment and storage media.</p> <p>CO 4-RTC should have controls over provisioning, termination, and recertification of user access.</p> <p>CO 5-RTC should have controls over the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule.</p> <p>CO 6-RTC should have controls over the completion and security of data transmissions, and identification and resolution of failures.</p>

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Subservice Organization	Services Provided	Related Control Objective	Complementary Subservice Organization Controls (CSOCs)
SAVIYANT	<p>Identity Lifecycle Management (ILM) including creation, provisioning, updating, deletion of identity, segregation of duties conflicts, and re-certification of access rights and entitlements.</p>	<p>Control Objective 1 Application Change Management</p> <p>Control Objective 2 System Software Change Management</p> <p>Control Objective 3 Physical Security and Environmental Controls</p> <p>Control Objective 4 Logical Access</p> <p>Control Objective 5 Job Processing</p> <p>Control Objective 6 Data Transmissions</p>	<p>CO 1 and CO 2-ILM should have controls to ensure that application/software development and application/software changes made to existing applications are documented, authorized, tested and approved for implementation.</p> <p>CO 3-ILM should have controls over physical security and environmental protection of computer equipment and storage media.</p> <p>CO 4-ILM should have controls over provisioning, termination, and recertification of user access.</p> <p>CO 5-ILM should have controls over the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule.</p> <p>CO 6-ILM should have controls over the completion and security of data transmissions, and identification and resolution of failures.</p>

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Subservice Organization	Services Provided	Related Control Objective	Complementary Subservice Organization Controls (CSOCs)
SE2	SE2 is used to process and administer participant lump sum and repetitive payments for a limited number of DB plans.	Control Objective 1 Application Change Management Control Objective 2 System Software Change Management Control Objective 3 Physical Security and Environmental Controls Control Objective 4 Logical Access Control Objective 5 Job Processing Control Objective 6 Data Transmissions	CO 1 and CO 2-SE2 should have controls to ensure that application/software development and application/software changes made to existing applications are documented, authorized, tested and approved for implementation. CO 3-SE2 should have controls over physical security and environmental protection of computer equipment and storage media. CO 4-SE2 should have controls over provisioning, termination, and recertification of user access. CO 5-SE2 should have controls over the scheduling of production processing and system backups, and the identification and resolution of deviations from the schedule. CO 6-SE2 should have controls over the completion and security of data transmissions, and identification and resolution of failures.

All subservice organizations contracted by MassMutual undergo stringent review prior to acceptance. Additionally, MassMutual obtains SOC 1[®] reports as available from subservice organizations which are reviewed for control weaknesses that could potentially impact MassMutual's business processing and ETX's general information technology control environment and to identify any 'complementary user entity' controls identified by the subservice organizations that MassMutual may need to address to help ensure the successful achievement of the subservice organization's control objectives.

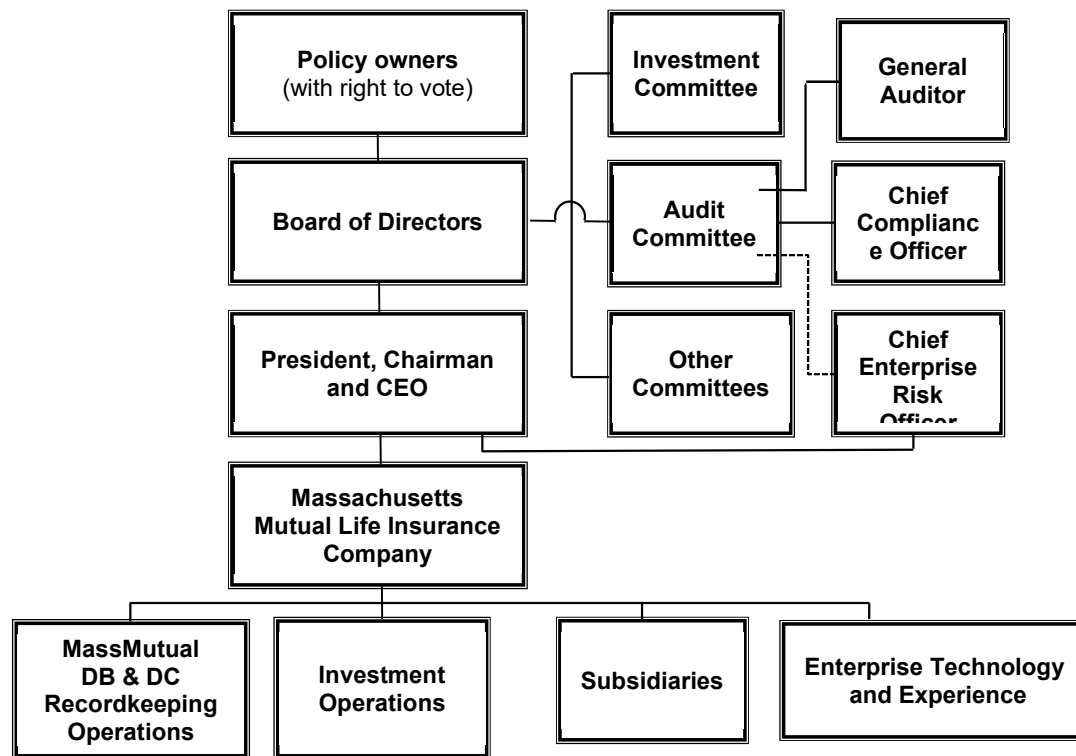
Where SOC 1[®] or similar attestations are not available, or the SOC 1[®] provided does not cover the operations pertinent to MassMutual, MassMutual conducts appropriate periodic quality and due diligence procedures which could include site visits and conference calls.

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Internal Control Elements

Control Environment

The following is an organization chart of the Company as of September 30, 2020:



The control environment reflects the tone of control consciousness set by an independent Board of Directors and the President/Chairman/Chief Executive Officer. It is the foundation of all other aspects of internal control. The Board of Directors provides oversight for MassMutual including ETX activities, including the Investment and Audit Committees of the Company. The Investment Committee exercises supervision and control of company investments and related financial matters, approves company investment policies and guidelines and reviews company investment strategies and investment performance. The Audit Committee is made aware of significant changes to the Company’s policies and practices with respect to accounting, financial controls, and financial reporting, including those within MassMutual including ETX.

The Company has formal hiring practices that are designed to confirm that new associates are qualified for their job responsibilities. For each position, minimum education and experience requirements are identified and HR policy requires satisfactory completion of reference for Executive level positions only, drug, background and certain criminal checks for all positions.

Training of personnel is accomplished through supervised on-the-job training and external and internal training courses. The new hire curriculums include standard formal training along with regular assessments. Training reports are available for managers to track employee progress towards development goals. Focus is also placed on protecting the investment in strategic portfolio initiatives by ensuring appropriate training

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and readiness of employees. It is MassMutual's (including ETX) management responsibility to determine that all MassMutual associates have received appropriate training. Department managers also encourage training and development that continues to qualify personnel for their functional responsibilities.

The associate performance evaluation process is an ongoing performance review and part of the employee development process. All associates receive feedback on their overall responsibilities, including internal controls, on a regular basis or at least twice a year. Associates identify their specific performance and development goals designed to enhance their knowledge of and ability to best service the retirement plans. During the evaluation and feedback process, any areas requiring improvement are identified and associates are coached on the ways they can improve their performance and meet their development objectives.

MassMutual including ETX policies, procedures, and controls are subject to regular reviews by corporate governance, risk, and control functions. Corporate Audit, Compliance and Ethics, Enterprise Risk Management, Financial Reporting Risk, Corporate Law and Enterprise Cyber Security functions are designed to evaluate compliance with Company policies in addition to governmental regulations that govern retirement services operations. Formal reports documenting the scope and results of reviews performed by the governance risk and control functions are prepared and submitted to Company management as well as the Audit Committee of the Board of Directors as applicable.

A summary of the Company's policies and procedures is incorporated in its Code of Conduct (the Code). All associates must certify that they have read the Code and agree to follow the Company's Code of Conduct and the underlying policies and practices. The Company has a formal conflict-of-interest policy, which establishes rules of conduct for associates. Specifically, associates are prohibited from divulging confidential information regarding Plan Sponsor affairs, trading in securities of the Plan Sponsors or affiliates or taking any action that's in conflict with the best interests of the plan. In addition, associates (access persons) who have access to non-public information about securities holdings of our mutual funds and separate investment accounts (SIAs) must provide periodic brokerage statements to a compliance officer for review if they hold an outside brokerage account.

MassMutual including ETX, located in the Company's Enfield, Connecticut and Springfield, Massachusetts facilities are organized along regional and functional lines with senior executives reporting to an Executive Vice President, who reports in turn to the President/ Chairman/Chief Executive Officer.

Risk Assessment

MassMutual's Enterprise Risk Management group (ERM) has a dedicated business risk management function that collaborates with various corporate governance risk and control functions to regularly assess the risk that could impede its ability to service DB and DC plans. The business risk management function works with MassMutual including ETX management to identify the services that meet the common needs of its user entities to assess the risk to ensure appropriate controls are in place. Periodic risk and ETX management meetings are held to ensure that risk assessment is a continuous process throughout the year. In addition to the risk assessment performed by the business risk management function, ERM and other Corporate entities perform additional risk assessments that are intended to provide perspective on relevant MassMutual including ETX risks.

- Enterprise Cyber Security, Procurement and Supplier Management facilitate regular risk assessments of subservice organizations utilized by MassMutual including ETX.
- Financial Reporting Risk facilitates annual risk assessments over MassMutual including ETX operations, which include the potential for fraud, that support the generation of MassMutual Financial Reporting.
- Corporate Audit performs regular risk assessments to select MassMutual including ETX operations to be audited.

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- Compliance and Ethics performs regular risk assessments to select MassMutual including ETX operations for business reviews.

The results of the risk assessments and any subsequent audits or reviews are communicated to MassMutual including ETX management and the business risk management function in ERM. ERM works with operations to help ensure actions identified and required to mitigate risk are taken.

In addition to the above and with respect to MassMutual Management's SOC 1® assertion process, MassMutual and ETX management annually review the narrative description, the control objectives it has set, and the design of individual controls identified to help achieve those objectives. MassMutual including ETX management have charted their risks and review existing process descriptions with departmental groups to help ensure that (a) new or changing risks are identified early, (b) the design of controls are still valid, and (c) staff are aware of their responsibilities with regards to ensuring the controls operate effectively. Upon completion of the review, the results of the assessments are compared with existing policies and, if appropriate, changes are made. This process also occurs during the year when business changes may dictate it.

Control Activities

MassMutual including ETX employ a number of control activities to help ensure DB and DC plans are administered in accordance with policies and procedures. A formal program is in place to help ensure its policies and procedures are complete, accurate and kept current. Changes to policies and procedures are reviewed and approved by management and communicated to associates via weekly newsletters, team meetings, web casts, or formal classroom training.

Monitoring

MassMutual including ETX management utilizes a variety of reports and monitoring mechanisms to help ensure controls are in place and functioning as intended and include:

- Periodic recertification access reviews
- Third party network security monitoring and real-time alerting
- Internal real-time network and server alerting and monitoring
- System Batch Monitoring Reporting

Enterprise Risk Management and other corporate governance risk and control functions regularly review and assess management and information technology operations to determine whether reporting and monitoring mechanisms are utilized by MassMutual including ETX management. Issues are timely communicated to senior management and the board of directors as appropriate, and follow-up actions are taken as necessary.

Corporate Audit Department (CAD)

Based on its periodic risk assessments of Company operations, CAD conducts internal audits of MassMutual business operations and systems. The results of the audits are presented to MassMutual including ETX Management who are required to respond with action plans to remediate audit findings.

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Information and Communication

Information

MassMutual utilizes the following mainframe, Unix and Windows based systems hosted at its data center located on the MassMutual Springfield campus, unless otherwise indicated, to support DB and DC Recordkeeping Operations.

DB and DC Recordkeeping System (PRS, CAS and PAS systems)

Application	Description
Advantage/LVAdmin (LVAdmin)	LVAdmin is a third party software package that performs individual benefit calculations for DB participants. LVAdmin is a Windows based application.
Proprietary Recordkeeping System (PRS)	Maintains DC records on a plan and participant level; accounts for contributions received by MassMutual. While PRS is not used for DB recordkeeping, it should be noted that PRS is used to support limited Plan Sponsor DB functions such as providing Plan Sponsor fund information for use during web access inquiry. PRS is a client server application and is operated on an HP/Unix server.
Participant Accounting System (PAS)	Maintains individual retiree DB pension accounts. PAS is operated on an IBM mainframe computer system.
Case Accounting System (CAS)	The primary DB recordkeeping system. Maintains DB records and tracks investments and contributions on a plan and contract level. CAS primary functions are conducted in a Windows environment with some supporting functions operated in a Unix environment.
Fund Valuation System (Unival)	Calculates Unit Values for pooled SIAs. Unival is operated in a Windows environment.
Consolidation and Routing System (CaRS)	Receives the group annuity and direct mutual fund activity data feed from PRS, CAS, and Unival, and feeds transactions to Fundlinx. CaRS is operated in an IBM AIX environment.
Fundlinx	Collects relevant data for group annuity and direct mutual fund investments and transmits daily trades to the NSCC and Mutual Fund companies. Fundlinx is a vendor built application operated in the Windows environment.
RetireSMART SM	Provides DC and DB participants and plan sponsors with secure 7x24x365 access to their accounts via the Internet. RetireSMART SM is operated on a Windows Web Farm.
RetireSMART SM Mobile app	Provides DC and DB participants and plan sponsors with secure 7x24x365 access to their accounts via the Internet. The App can be used to obtain account balances, change investment elections,

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Description of the System Provided by MassMutual

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Application	Description
	rebalance existing investment portfolios and request loans (if applicable to the specific plan).
Total Retirement Center (TRC)	Provides DC and DB plan sponsors with secure 7x24x365 access to their accounts via the Internet. TRC is a web-enabled application.
DataSMART	Provides reporting, tracking, data extracts, and workflow automation for DB and DC legislative indicative plan changes.
TreX	A workflow system based on security settings, the TreX application allows storage of documents with the ability to perform numerous acts including but not limited to searching, viewing, adding, and modifying content, as well as managing and presenting multiple key business workflow solutions.
Matrix	A registered investment platform available for servicing Qualified & Non-Qualified DB contracts. Maintains DB Registered Investment records and offers a wide range of investment offerings on a digitally enabled investment platform. This system is hosted by Matrix Financial Solutions in Denver, Colorado. The controls operated by the service organization are not in scope of this SOC 1 report.
CA Workload Automation AE	A batch job-scheduling tool used for Windows, Unix, and Linux platforms applications.
Quickbase	For new DC business, Quickbase is used for tracking new business area reviews. Quickbase is an externally hosted system at Quickbase, Inc.
At MM.com (AMC)	AMC (Accounts.Massmutual.com) provides a single ID registration and login experience for Sponsor sites.
Cyberark	A security tool used for the security of privileged accounts through password management.

Tax Exempt Market DC Recordkeeping System (OMNI system)

Application	Description
FIS OMNI Recordkeeping System	A 3 rd party solution from FIS and used to manage plan and participant tax exempt DC account recordkeeping. OMNI is a vendor built application accessed via the internet. This system is hosted by FIS. The controls operated by the service organization are not in scope of this SOC 1 report.

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Application	Description
FIS PowerImage (PowerImage) (Effective 10/1/2019- 11/1/2019)	PowerImage, a 3 rd party solution from FIS, is a document scanning and workflow application. PowerImage uses a Microsoft SQL Server database and is hosted at MassMutual’s Springfield data center. Since PowerImage was only in scope for the first month of the period and no changes were made to the tool during the period, management does not consider this a significant tool for end users.
FIS OMNI Workflow (Effective 11/2/2019)	OMNI Workflow is a 3 rd party solution from FIS used for document scanning and workflow application accessed via the internet. This system is hosted by FIS. The controls operated by the service organization are not in scope of this SOC 1 report.
Automated Disbursement Replacement System (“ADSR”) (Effective 10/1/2019- 1/13/2020)	ADSR is an application maintained and hosted at MassMutual Springfield data center. ADSR controls payment disbursement including the issuance of replacement checks. It stores disbursement history and tax withholding information for year-end reporting and tax adjustments and is used by MassMutual for payment research and call center support.
FIS OMNIPay (Effective 1/14/2020)	OMNIPay is a 3 rd party solution from FIS and is used for processing all distributions for the retirement plans records kept in OMNI (DC) application accessed via the internet. This system is hosted by FIS. The controls operated by the service organization are not in scope of this SOC 1 report.
TRACER III	TRACER III is an in-house banking software utility developed externally and transferred to MassMutual. TRACER III is the cash receipt system for incoming checks and wires and is the utility that facilitates the Auto Match process that reconciles checks and wires received with expected OMNI contributions.
Recon Suspense	Recon Suspense is an internally developed accounting and reconciliation application that is utilized by the OMNI (DC) Suspense and Reconciliation Team for managing and reporting on premium and disbursement suspense items.
Treasury Cash Control (TCC)	TCC is a treasury application used for internal cash reporting.

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Midsize Corporate Market DC Recordkeeping System (TRAC system)

Application	Description
DST TRAC DC Recordkeeping System	TRAC, also referred to as the Participant Plan Accounting System, is an externally hosted, 3 rd party Software-as-a-Service (SaaS) DC recordkeeping system for MassMutual's Midsize Corporate clients. This system is hosted by DST Systems in Kansas City, MO. The controls operated by the service organization are not in scope of this SOC 1 report.
DST Automated Work Distribution (AWD)	The vendor system automates the handling and distribution of hardcopy client and participant documents. Physical imaged data is hosted at the 3 rd party site. This system is hosted by DST Systems in Kansas City, MO. The controls operated by the service organization are not in scope of this SOC 1 report.

Investment Services Operations System

Application	Description
FUNDlinx	FUNDlinx collects NAVs, unit values and portfolio investments for group annuity and direct mutual fund investments; receives distribution rates, NAVs, trades from the recordkeeping system and action items from the National Securities Clearing Corporation (NSCC); and transmits daily trades to the NSCC and to Mutual Fund companies. FUNDlinx is a third party software package that transmits daily trades to the National Securities Clearing Corporation (NSCC) and Mutual Fund companies for execution. FUNDlinx is operated in the Windows environment.
Consolidation and Routing System (CaRS)	Receives the group annuity and direct mutual fund activity data feed from PRS, CAS, and Unival, summarizes transactions to an omnibus (summary by fund) level and feeds transactions to FUNDlinx. CaRS is operated in an IBM AIX environment.
Fund Valuation System (Unival)	Unival collects and processes pricing related data including Net Asset Values (NAV) received from 3 rd parties via electronic transmission, e-mail and fax and transmits prices to the recordkeeping systems (i.e. TRAC, OMNI, and CaRS for Reflex and CAS). Additionally, Unival collects and compares critical data from multiple application and supports investment product trading. Trades from DB and DC recordkeeping platforms (such as OMNI, TRAC, and SE2) are entered, posted and forwarded to FUNDlinx for aggregation and transmittal to MassMutual's counter-parties.

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Application	Description
TreX	Workflow system based on Security Settings that stores documents with the ability to perform numerous acts including but not limited to Searching, Viewing, and Adding, as well as managing and presenting multiple key business workflow solutions.

Communication

MassMutual including ETX management consistently and regularly communicates the importance of following policies and procedures as well as the importance of complying with the rules and regulations that govern our operations. Management uses a variety of mechanisms to communicate this message including department meetings and compliance newsletters. Additionally, MassMutual Corporate Policies and Procedures help enforce the importance of open communication channels through Corporate Policies and Procedures Manuals such as the Code of Conduct. Associates are encouraged and empowered to identify and raise concerns and issues to management to facilitate appropriate and timely resolution. MassMutual employs a number of tools to facilitate open communication such as the MassMutual Compliance and Ethics Reporting Hotline. Additionally, the employee and manager performance evaluation program is designed to encourage open and regular communication and information sharing.

MassMutual also encourages and maintains two way communications with its Plan Sponsor and participant clients regarding the services that MassMutual provides including new and changed products, privacy and security concerns and satisfaction with services offered and scope and availability of related SOC reports. Similarly, MassMutual also maintains regular two-way communication with its subservice organization to comment on service levels and to discuss changes in operational practices.

Other Considerations

The Company is subject to regulation and supervision by the Division of Insurance of the Commonwealth of Massachusetts as well as other countries and states in which business is conducted. As such, the Company is required to file periodic reports with and is subject to periodic examination by, the Commonwealth of Massachusetts as well as other countries and states that business is conducted in. The Company's most recent, completed examination by the Division of Insurance was for the year ended December 31, 2014; an examination for the year ended December 31, 2019 was initiated but not completed during the test period. In addition, MassMutual is subject to regulation by the Department of Labor (DOL), the Internal Revenue Service (IRS), the Securities and Exchange Commission (SEC), and the Financial Industry Regulatory Authority (FINRA).

Changes in the Control Environment

As part of ongoing operations, MassMutual Business including ETX make changes to its operations and various support group's roles and responsibilities to better align the business to service clients. The below changes to the in-scope control environment were introduced during the period:

- OMNI Workflow is a 3rd party solution from FIS and hosted at FIS used for document scanning and workflow application accessed via the internet that was effective 11/2/2019 and OMNI Workflow replaced FIS PowerImage.
- OMNIPay is a 3rd party solution from FIS and hosted at FIS used for processing all distributions for the retirement plans records kept in OMNI (DC) application accessed via the internet. This change was effective on 1/14/2020 and OMNIPay replaced Automated Disbursement Replacement System (ADSR).

MassMutual Defined Benefit and Defined Contribution Recordkeeping Operations System

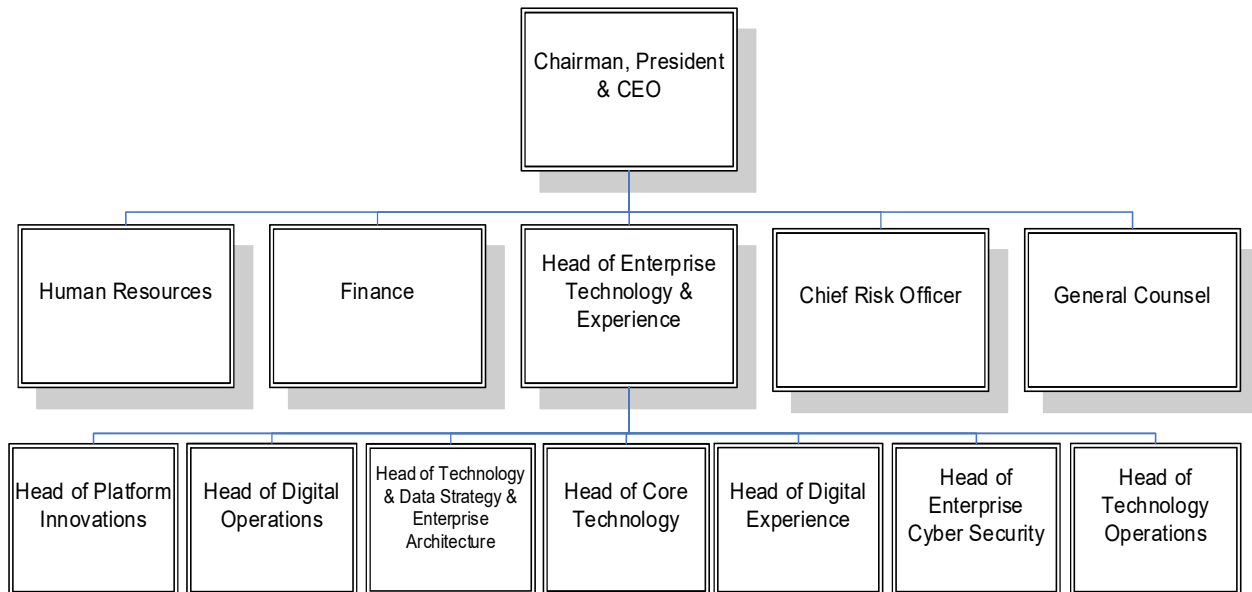
Description of the System Provided by MassMutual

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Information Processing

Enterprise Technology and Experience (ETX) Organization Overview

The ETX organization in coordination with MassMutual has accountability for the oversight of information technology at MassMutual, equipping employees with the technology and tools they need to support policyholders, producers and customers, helping to achieve MassMutual's business objectives. The Head of Enterprise Technology and Experience who reports directly to MassMutual's leadership is directly accountable for all aspects of: enterprise-wide technology operations; solutions delivery for the DB and DC, Insurance and corporate units; data management; information and cyber security; enterprise continuity planning; overall IT governance; and, the research and development of emerging technology solutions. The following chart illustrates the ETX organization.



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Description of Operations

General Information Technology Controls

Application Change Management

MassMutual recordkeeping systems hosted at MassMutual's Data Center located on the Springfield, Massachusetts campus comprise in-house developed and maintained applications and 3rd party developed and maintained applications. MassMutual also uses some externally hosted and supported recordkeeping solutions and utilities.

The Company utilizes a solutions delivery life cycle (SDLC) methodology for all software hosted at MassMutual. The SDLC establishes and documents the stages, steps, procedures, and processes for developing new systems and modifying existing systems. SDLC controls for externally hosted systems are not in scope for the SOC 1[®] report.

Requests for development projects and standard and normal changes are reviewed and approved by appropriate Business or Technology leadership. All demand and approvals are captured in the Change Management System (CMS). Internal and Cloud tools are used as repositories for project methodology artifacts, including code build procedures, knowledge capture and sharing. These tasks do not apply to externally developed and hosted software.

Emergency system software changes are approved by the Incident Management) and are treated the same as normally scheduled changes with the exception that formal documented approval may come after the resolution has been tested and implemented.

Requests for production code fixes, software maintenance and upgrades are documented in the Change Management System (CMS) and follow the same process as normal projects.

Separate development, test and production environment/data sets are used by MassMutual to support application change management.

Software management tools are used to control source code versions throughout the change management process and changes are migrated to production by authorized personnel. The ability to implement source or machine code into production is limited to administrative personnel whose job responsibilities include change management responsibility. Developers do not have administrative privileges.

Third party provided applications follow the change management process, although ETX does not have access to develop changes or use software management tools.

Depending on the application, testing is performed in a pre-production test environment which mirrors production using extracts of production data. Test results are reviewed and approved by Business users or Quality Team members (acting on behalf of the Business users) using the electronic build package prior to being migrated into production.

Authorized Business or ETX Managers review and approve the electronic build package prior to when the modified program is migrated into production.

System Software Change Management

ETX has policies and procedures in place to manage vendor software upgrades, patches, and version releases and to determine which updates need to be installed. Vendor upgrades to key operator systems are supplied by the vendor and applied periodically at the discretion of the ETX platform specialists. Service

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packs and patches are applied and newer versions of software are frequently installed to help ensure regulatory compliance and continued vendor support.

System software changes are controlled through a change control process. A change requestor must enter the Request For Change (RFC) into a Change Management System (CMS) to manage the implementation of the software change and to track the system changes to be made. The RFC must include a description of the change implementation requirement, an impact assessment, and appropriate recovery procedures and is peer reviewed. The change request process categorizes requests as either Standard, Normal or Emergency. A Standard request is one where the activity is considered routine and, therefore has been pre-approved by the Change Advisory Board (CAB) and Production Support management. If the activity ever fails, it then reverts to a normal request type until it processes successfully ten (10) times. A Normal request is one that is not considered routine and therefore requires Production Support Management approval in order to be eligible in the CMS for review and approval by the CAB. An Emergency request is one that is operationally critical in nature, must be deployed as soon as possible, and remediates a service disruption (outage). When formal approval is given, it is documented in the CMS. Changes are tested and appropriately implemented. Administrator access to promote new and upgraded operating system software is limited to staff whose job responsibilities include change management.

Physical Security and Environmental Controls

Physical Security

Information security policies and procedures are documented and made available to all employees of the Company by way of the Company Intranet. The documented policies and standards provide an overview of physical access security and information security across the various computing systems in use at the Company.

Data Center Security

MassMutual hosted in scope application and database computer platforms, operating systems, network equipment (including firewalls, switches and routers), and telecommunications equipment are located in the MassMutual Springfield Data Center. A recovery data center is also located in Colorado. Access through all entry and exit points to the primary Springfield Data Center building is controlled by a card access system. Access within the building is controlled by a mantrap entry system and electronic key card badge access. Closed Circuit TV (CCTV) video cameras monitor the exterior of the Data Center building. Building security representatives in the security office of the main MassMutual building monitor the external cameras.

Computer equipment which supports critical business functions is located in a card-key protected computer room within the Data Center. Entry is controlled by a card-key and PIN access control system. Recording CCTV video cameras monitor the interior of the Data Center and inside the computer room. Climate is controlled by air conditioning units, humidification units, centrifugal chilling units, and a continuous leak detection system beneath a raised floor and all critical electrical and mechanical alarms are monitored by Facilities and Security 7x24x365. Fire protection is handled through Halon and dry pipe, pressurized sprinkler pre-action fire suppression systems, intelligent ionization, heat, and photo-electric smoke detectors located above the ceiling, in the ceiling and below the raised floor, and a fire monitoring panel.

The computer server hosting the Card Access System that is used to manage magnetic card access throughout the MassMutual campus is located in the secured Springfield Data Center with a fail-over server located in the secured Colorado Data Center.

Access to the main campus buildings which host MassMutual staff, computer terminals, and document storage is also secured from unauthorized access through the use of the same Card Access System.

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Physical access to computer equipment, network equipment, file servers and magnetic storage media and program documentation is limited to appropriately authorized persons. Policies and procedures are in place to control access privileges to the Data Center. Corporate Security will only provide permanent or temporary Data Center access upon receipt of an authorized ticket from the Request Tool.

Human Resources will notify ETX personnel of employee terminations via a termination report. Data Center access is revoked for terminated personnel upon this notification by Corporate Security. Monthly reviews of the Data Center access list are completed to determine that only authorized persons retain access based on their job responsibilities and take appropriate action to remediate deviations. Adhoc reviews can be performed via a daily report.

Logical Security Access Controls

External Parties

Information entered by participants and Plan Sponsors via the Internet is through secure methods. Security is addressed through several ways including:

- Secure Socket Layer (SSL) security settings
- Security monitoring procedures

The confidentiality and integrity of participant user authentication information, Plan Sponsor user authentication information, account data and contract and plan data passing between the customer's web browser and the web server across the Internet is protected using the SSL. Users can identify that they are establishing an SSL connection with RetireSMARTSM and TRC web server through the server-side digital certificate issued by VeriSign. Participant access management to RetireSMARTSM is managed by MassMutual and access is available to participants as long as the participant account remains funded. Once the account balance is depleted, participants may lose access through a system managed process.

Internet access to and from the MassMutual network, including access by Participants and Sponsors through the Internet, are controlled by firewall systems installed at each Internet access point within the network De-Militarized Zone (DMZ). MassMutual's internet web services operate on servers located inside the internal network. The firewalls are configured with a default deny policy and are configured to permit authorized services only.

Real-time monitoring and alert generation to internal support staff of external network security events is conducted using a third-party company.

Transactions conducted via RetireSMARTSM and TRC applications are logged to a central file server and reviewed by the Security Administrators as necessary. RetireSMARTSM and TRC applications are logged by Information Security and repeated unauthorized access attempts are investigated by them.

Participant account balances and activity are stored in a Sybase secured location on the database and passwords are stored in LDAP directory. Application procedures call upon LDAP when the participant attempts to access the data or enter a password.

For the RetireSMARTSM application, including remote and home office users, a time-out threshold of a specific amount of time has been established for browser inactivity.

Sub Service Organizations

Provisioning, termination, and recertification of MM user access to third party systems follow the same procedure and controls referenced in the Logical Security Access process.

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Employees

MassMutual maintains a formal Corporate Compliance Guide and documented Security Policies to inform users of their privileges and responsibilities related to system access and use. Annual acceptance by users that they have read and understood the policy is required by and monitored by management as part of the Code of Conduct.

Access authentication controls are required and configured on all platforms and applications within the MassMutual business environment. Authentication requires a combination of a unique user identification code and unique password to allow the user access to system resources. Password parameters, including password life, password length, number of invalid attempts and timeout limits, are required for each system. Structured menus and security tables are used to define each user's access rights and functional privileges in the applications.

The Enterprise Services Onboarding/Access Management Team is responsible for establishing Active Directory user IDs, monitoring domain level access and for administering access to the Mainframe and Midrange environments. The team validates the request for approval by the individual's manager and secondary approval, if necessary. The team or Local Security Administrators are responsible for providing application specific access approved by the manager of the end user.

Requests for access are submitted through the Request Tool and approved by Department Managers. The Enterprise Services Onboarding/Access Management Team grants the requested access only after proper authorization is complete. User privileges are assigned to users based on job responsibilities.

On a daily basis, MassMutual's user access review systems receive employee and contractor work status information from the HR system to facilitate the periodic user access and employee transfer review processes. Access privileges included within those reviews are based on entitlement information provided by application feeds (daily or weekly) or direct connections to each application's security repositories.

For applications that are configured within the user access review system, Business management reviews application user access and privileges for appropriateness and authorizes the user access review system administrator to retain or remove access as necessary. Administrator access to user access review system is restricted to personnel based on job responsibilities. For applications that are not configured within the user access review system, a manual review process must be established within the business area to satisfy the review of user access. On a weekly basis, the user access review system sends employee transfer notifications to Business management to conduct a review to determine if system access is appropriate. Access that is determined to be inappropriate by the manager is forwarded to the appropriate security administrator for removal. Quality checks are performed on a monthly basis to ensure employees and contractors identified by HR as having transferred are captured in the transfer review and that their user access has been validated. Discrepancies identified are investigated and resolved.

On a daily basis, employee and contractor scheduled terminations from the HR system automatically feed the Security Identity Management system to facilitate the disabling of network access. In addition, automated emails from the HR system are sent to the Enterprise Services Onboarding/Access Management Team to request the disabling of enterprise host level and externally available access. Requests for immediate terminations are communicated over the phone by HR to the Enterprise Services Onboarding/Access Management Team to help ensure the immediate disabling of terminated personnel network, enterprise host level, and externally available access.

The Enterprise Services Onboarding/Access Management Team uses the internally developed orphaned ID reports which are created and distributed to administrators so that additional internal user access definitions are disabled or removed following the termination of employees and contractors.

Operating system and database administrator access is restricted to persons with administrator responsibilities across all systems. Operating system administrator access is generally restricted with unique user-IDs and passwords; however, there are some systems that are required to maintain a small

*MassMutual Defined Benefit and Defined
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*Description of the System Provided by
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number of shared user IDs due to system limitations or special requirements, e.g. Windows NT and engineering group maintenance. CAS system limitations also require that operating system administration functions use a shared ID.

Access to system level or batch process job accounts are authenticated at the local system level, while user application access authentication is controlled through Active Directory.

All Windows users including administrators are required to comply with Company domain password policies. The ability to grant network access privileges to MassMutual directories is restricted to personnel with administrator responsibilities.

Direct database access is managed by a limited group of support staff that are authorized to make changes after appropriate approvals are received. Business requests for direct data changes are initiated through a Request Ticket or a Change Management Request (CMR) and approved by the business or a systems manager. Direct data access is governed by rules that are defined by both the business and ETX communities and is monitored closely with an automated monitoring tool. The tool monitors all predefined high risk data and automatically generates alerts when that data is changed. An automatic e-mail alert is sent to the responsible Production Support or Business team for review. After review, an appropriate update is made on the entry for documentation purposes before the status is changed, triggering an automated e-mail to the responsible manager for approval and clearance within the next month. Direct database change history is archived for future audit and analysis.

Software management tools are used to control the delivery lifecycle system throughout the change management process and changes are migrated to production by authorized personnel.

Participants

Access to information and functionality on the RetireSMARTSM application (including using the RetireSMARTSM Mobile app) require a valid user identification code and password. To access an account via the Internet, a participant must be approved through the enrollment process and provided with a randomly generated password. RetireSMARTSM requires the participant to change their password the first time they access RetireSMARTSM. There are no internal application users for RetireSMARTSM. A system script passes the unique user identifier and password entered onscreen to the LDAP control software for authentication. If the unique user identifier is entered incorrectly after a predefined number of attempts, it will result in the user ID being locked. The user is directed to the "Forgot Your Login?" page where the participant can reset their RetireSMARTSM password by answering predefined security questions.

Plan Sponsor access to the TRC must also be approved through a request that is sent to the appropriate Enterprise Services Onboarding/Access Management Team Security Administrator. Plan Sponsor access privileges utilize the same password parameter restrictions as the Company employees with access to MassMutual's applications and platforms.

Participants and Plan Sponsors are automatically logged-off the system after a specified period of inactivity based on their role and menu access options.

Job Processing

Application and Operations Support (a group within MassMutual's Technology and Administration Organization) is responsible for maintaining mainframe, network, and mid-range system availability. Separately managed teams are assigned to monitor the performance of these systems. A call rotation schedule is in place to help ensure that the systems remain operational 24x7x365. Escalation procedures and on-call listings are available and maintained in the Company's primary centralized notification application in the event that a time sensitive support issue arises.

Data Center Operations are required to complete a series of internal training courses which are intended to provide them with the skills and knowledge to fulfill their job responsibilities.

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Job scheduling software is used to control all production jobs including system backups. Access to add, change, or delete job schedules is restricted to ETX Operations and On-call personnel whose job responsibilities include making job schedule changes. The scripts used to run these jobs are located in a secure directory. Users, programmers, and operators communicate job schedule requirements, changes and associated processing parameters to the appropriate Production Support groups. These groups are responsible for manually preparing detailed daily and monthly job schedules to process production jobs across different computer platform types within the MassMutual environment.

The Production Support manager must approve any changes to the production schedule. Job scheduling systems are configured to automatically alert On-call personnel in the event that jobs including backups have abended. System backups are scheduled and performed on production systems on an agreed and published schedule.

For all production processing errors that arise and cause a Service Level Agreement (SLA) to be missed, including system backup failures or unavailability of a widely used application, Application and Operations Support personnel are required to create an incident ticket using CMS. Problem information and resolution steps are updated in CMS tickets.

Once the immediate problem raised on a CMS ticket has been resolved it is subject to collective root cause analysis.

Data Transmissions

ETX is responsible for supporting MassMutual application related data transmissions. Information transmitted to and from MassMutual systems is required to be protected and monitored. Data files and/or data streams for inbound and outbound data transmission using the public networks are appropriately encrypted using secure file transfer protocol (SFTP) or other encryption mechanisms.

In the event that an inbound or outbound data transmission does not successfully complete, error notifications in the form of an e-mail are generated by the application and sent to the appropriate job stream owners. The event remains visible on the Data Center Operations monitor until the issue is resolved. The job stream owner support groups monitor transmissions throughout the day, review any failure notifications and reschedule transmissions accordingly. Administrative access to the data transmission directories is restricted to appropriate members, based on their job responsibilities.

Control Objectives, Related Controls, and Tests of Operating Effectiveness

MassMutual has specified its control objectives and identified the controls to achieve these objectives. These objectives have been determined by management of the Company by reference to, among other information sources, the AICPA Audit and Accounting Guide, Audits for Employee Benefit Plans.

MassMutual's control objectives and related controls are included in Section IV of this report (MassMutual Control Objectives and Related Controls, and KPMG LLP's Tests of Controls and Results of Tests of Operating Effectiveness) and are considered an integral part of MassMutual's description of its system.

The Service Auditor has determined the nature, timing, and extent of testing to be performed. Further information on the nature, timing, and extent of testing and results of testing is contained in Section IV.

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Complementary User Entity Controls

MassMutual designed its General Information Technology Controls system applicable to recordkeeping operations with the assumption that certain controls would be implemented by its user entities. In certain situations, the application of specific controls at user entities is necessary to achieve certain control objectives identified in this report. In such instances, the required user entity controls are identified under the related control objective in Section IV of this report. The list of complementary user entity control considerations presented with certain specified control objectives does not represent a comprehensive list of all the controls that should be employed by MassMutual user entities. Other controls may be required at user entities.

Section IV
MassMutual's Control Objectives and Related Controls, and KPMG LLP's Tests of Controls and Results of Tests of Operating Effectiveness

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Work of Others

Members of MassMutual Service Organization's IT Controls & Reporting Team (ITCR) performed tests of a subset of controls for the following control objectives:

- Control Objective 3: Controls provide reasonable assurance that physical access to computer equipment, storage media and program documentation is limited to authorized individuals and that Data Center computer assets are environmentally protected.
- Control Objective 4: Controls provide reasonable assurance that logical access to production programs, data and system infrastructure is limited to authorized personnel.
- Control Objective 5: Controls provide reasonable assurance that production processing and system backups are appropriately scheduled, and deviations from scheduled processing are identified and resolved.

The tests performed by members of the ITCR and CohnReznick included inquiry of relevant parties who performed the control activities, observation of the control being performed at different times during the examination period, and inspection of the documentation for a sample of transactions. KPMG tested the work of members of the ITCR and CohnReznick through a combination of independent testing and reperformance and noted no exceptions.

Completeness and Accuracy of Information

Testing the accuracy and completeness of information provided by MassMutual is also a component of the testing procedures performed. Information produced by the entity used by KPMG may include, but is not limited to:

- Standard “out of the box” reports as configured within the system.
- Parameter driven reports generated by in-scope applications and databases.
- Custom developed reports that are not standard to the application such as scripts, report writers and queries.
- Spreadsheets that include relevant information utilized for the performance of testing a control.
- Massachusetts Mutual's prepared analyses, schedules, or other evidence manually prepared and utilized by the Company.

While these procedures are not specifically described in the “KPMG Tests of Operating Effectiveness”, KPMG evaluated whether the information provided by MassMutual was sufficiently reliable for our purposes, including, as necessary, obtaining evidence about the completeness and accuracy of the information and evaluating whether the information was sufficiently precise and detailed for our purposes.

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General Information Technology Controls: Application Change Management

Control Objective 1
Controls provide reasonable assurance that changes to existing application systems are documented, authorized, tested, approved, and implemented by authorized personnel.

Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>MassMutual uses various computer platforms to support recordkeeping application processing. The following provides a key to the platforms that support the applications in use.</p> <p>A = IBM Mainframe = A1 (PAS)</p> <p>I = Internet = I1 (RetireSMARTSM) + I2 (TRC) + I3 (RetireSMARTSM Mobile app) + I4 (AMC)</p> <p>S = Software-as-Service = S1 (TRAC) + S2 (OMNI) + S3 (Matrix) + S4 (AWD) + S5 (Quickbase) + S6 (ILM)</p> <p>U = Unix = U1 (PRS) + U2 (CaRS)</p> <p>W = Windows = W1 (Unival) + W2 (Fundlinx) + W3 (LVAdmin) + W4 (CAS) + W6 (PowerImage) + W7 (Recon Suspense) + W8 (Tracer) + W9 (ADSR/OMNIPay) + W10 (TCC) + W11 (TreX) + W12 (CA Workload Automation AE) + W13 (DataSMART) + W14 (Cyberark)</p>	
<p>1.1 Change requests are initiated, reviewed, and authorized by appropriate Business or ETX Managers before being assigned to a developer.</p> <p>Non-business related technical changes initiated by ETX do not require business approval.</p> <p>(A1, I1-2, S1,4,6, U1-2, W1-4,6-11, 13-14)</p>	<p>Inspected supporting change documentation (Request for Change tickets (RFCs), Project Charters, e-mail correspondence between Business and ETX representatives and Project Plans) for a selection of changes and determined that the changes were reviewed and authorized by the supporting Business or ETX Manager before being assigned to a developer.</p> <p>No Exceptions Noted.</p>
<p>1.2 Separate development, test and production environment/data sets are used by MassMutual to support application change management.</p> <p>(A1, I1-2, U1-2, W1-4,10)</p>	<p>Inspected system evidence to determine that separate development, testing, and production regions were maintained and used in the change management process.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>1.3 Version control software utilities log the release of source code for change. Program versions are controlled with the Endeavor, PVCS, SCCS, TFS, and Bitbucket utilities.</p> <p>(A1, I1-2, U1-2, W1,4,10)</p>	<p>Observed ETX personnel release software for change using version control software and noted that the utilities maintained a log of the date and time that modules were released for change and the identities of the support staff requesting the release.</p> <p>Inspected the configuration settings on the IBM mainframe and determined that the production version of PAS was configured to use Endeavor version control software.</p> <p>Inspected the configuration settings for PVCS, SCCS, Bitbucket and TFS and determined that application programs were configured to use version control.</p> <p>No Exceptions Noted.</p>
<p>1.4 Testing is performed, and results are reviewed and approved by Business users or Quality Team members on the Request For Change (RFC), which includes release notes related to implementation, prior to being moved into production.</p> <p>(A1, I1-2, S1,4,6, U1-2, W1-4,6-11, 13-14)</p>	<p>Inspected supporting documentation, including testing strategies, release notes and Business user or Quality Team sign-offs for a selection of changes and determined that Business users or the Quality Team tested the changes and approved them on the Migration Sheets or RFCs, which include release notes related to implementation, prior to the migration of the changes into the production environment.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>1.5 For changes that affect business functionality of PAS, users document their approval in Endeavor for program changes that are authorized to be promoted to production prior to the changes being migrated.</p> <p>(A1)</p> <p>For applications other than PAS, change request documentation including electronic RFCs are reviewed and approved by an authorized Business or ETX Manager before the modified program is moved to production. Business or ETX Managers electronically approve the change requests evidencing their review and approval.</p> <p>Emergency system software changes are approved by Incident Management and are treated the same as normally scheduled changes with the exception that formal documented approval may come after the resolution has been tested and implemented.</p> <p>(I1-2, S1,4,6, U1-2, W1-4,6-11,13-14)</p>	<p>Inspected Endeavor for a selection of changes to PAS and determined that the Business users had approved changes prior to the migration of changes into the production environment.</p> <p>Inspected supporting change documentation (RFCs) for a selection of non-PAS changes and determined that the changes were reviewed and signed-off by either an authorized Business or ETX personnel electronically prior to migration.</p> <p>Inspected supporting change documentation (RFCs, Project Charters, e-mail correspondence between Business and ETX personnel, Project Plans, Incident Management review documentation) for a selection of emergency changes and determined that emergency changes were approved after the event.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>1.6 The ability to implement source or machine code into production is limited to administrative personnel whose job responsibilities include change management responsibility. Developers do not have administrative privileges.</p> <p>(A1, I1-2, U1-2, W1-4,10)</p>	<p>Inspected system-generated access listings of persons with the ability to implement source or machine code into production, organization charts and inquired of management to determine whether access was limited to administrative personnel whose job descriptions included change management responsibilities and that developers did not have the ability to promote source code or machine code into production.</p> <p>Exception Noted.</p> <p>One of 12 users (total population) were identified as having both development and migrator access to the change management tool for RetireSMART and TRC applications.</p> <p>Management Response:</p> <p>Due to an inherent system limitation of the change management tool, the administrator, developer, and migrator role cannot be separated. As a result, management performed a lookback of system logs for the period and determined that the user did not perform any development activities within the audit period.</p> <p>Additional Testing Performed by KPMG LLP:</p> <p>KPMG inspected management’s lookback procedures and system evidence performed for the period 10/1/2019 to 9/30/2020 and determined that the user did not perform development activities during the period.</p>

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General Information Technology Controls: System Software Change Management

Control Objective 2

Controls provide reasonable assurance that changes to existing system software and implementation of new system software are documented, authorized, tested, approved, and implemented by authorized personnel.

Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>MassMutual uses various computer platforms to support recordkeeping application processing. The following provides a key to the platforms that support the applications in use.</p> <p>A = IBM Mainframe = A1 (PAS) I = Internet = I1 (RetireSMARTSM) + I2 (TRC) + I3 (RetireSMARTSM mobile app) U = Unix = U1 (PRS) W = Windows = W1 (Unival) + W2 (Fundlinx) + W3 (LVAdmin) + W4 (CAS) + W5 (VPA) + W10 (TCC)</p>	
<p>2.1 ETX System Administrators monitor vendor software upgrades, security patches, and version releases to determine, based on business impact and risk, which updates need to be authorized and installed to maintain the currency and security of the software environment.</p> <p>(A1, I1-3, U1, W1-4,10)</p>	<p>Inspected the software versions for the operating systems in production and inquired of ETX personnel and determined that the software versions in place agreed with the latest approved versions.</p> <p>Inspected e-mails evidencing that ETX personnel reviewed potential security patch requirements and determined that ETX System Administrators monitor and authorize which patches will be applied across servers.</p> <p>No Exceptions Noted.</p>
<p>2.2 ETX Systems management approves the build on the Request For Change (RFC) once they have reviewed system and quality testing performed by System Software personnel and prior to migration to production.</p> <p>(A1, I1-3, U1, W1-4,10)</p>	<p>Inspected RFCs, sign-offs and supporting documentation for a selection of software changes and determined that Systems management approved the RFC once system and quality testing had been completed and prior to migration to production.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>2.3 The Change Advisory Board (CAB) reviews and approves normal changes submitted by a Change Owner, who is required to document the description of the system software change, the implementation requirements and the impact on other areas on a RFC form using CMS.</p> <p>Standard change requests follow the Pre-Approved process.</p> <p>Administrator access to CMS is limited to appropriate staff.</p> <p>Additionally, Emergency system software changes are approved by Incident Management and formal documented approval may come from Production Support after the resolution has been tested and implemented.</p> <p>(A1, I1-3, U1, W1-4,10)</p>	<p>Inspected a listing of users with administrator access to CMS and inquired of support management and determined that administrator access was appropriately restricted to users with job responsibilities requiring change management access.</p> <p>Inspected RFCs and sign-offs for a selection of standard, normal, and emergency system software changes and determined that evidence of description, rationale, requirements, impact, and authorization was complete, and the changes were approved by the CAB for standard and normal changes and Incident Management for emergency changes.</p> <p>No Exceptions Noted.</p>
<p>2.4 Administrator access to promote new and upgraded operating system software is limited to staff whose job responsibilities include change management.</p> <p>(A1, I1-3, U1, W1-4,10)</p>	<p>Inspected system-generated access listings of user accounts with the ability to promote new and upgraded operating system software changes into production and inquired of ETX personnel and determined that access was limited to personnel whose job responsibilities include system software change management.</p> <p>No Exceptions Noted.</p>

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General Information Technology Controls: Physical Security and Environmental Controls

Control Objective 3

Controls provide reasonable assurance that physical access to computer equipment, storage media and program documentation is limited to authorized individuals and that Data Center computer assets are environmentally protected.

Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>MassMutual uses various computer platforms to support recordkeeping application processing. The following provides a key to the platforms that support the applications in use.</p> <p>A = IBM Mainframe = A1 (PAS)</p> <p>I = Internet = I1 (RetireSMARTSM) + I2 (TRC) + I3 (RetireSMARTSM Mobile app)</p> <p>U = Unix = U1 (PRS) + U2 (CaRS)</p> <p>W = Windows = W1 (Unival) + W2 (Fundlinx) + W3 (LVAdmin) + W4 (CAS)+ W6 (PowerImage/OMNI Workflow) + W7 (Recon Suspense) + W8 (Tracer) + W9 (ADSR/OMNIPay) + W10 (TCC) + W11 (TreX)</p>	
<p>3.1 Core application MassMutual computer equipment, network equipment, file servers, magnetic storage media and program and system support documentation is located in the Springfield Data Center, which is a separate building, secured by a combination of a card key access mechanism and PIN. The computer room within the Data Center is secured by zoned card key access and a PIN.</p>	<p>Observed the Springfield Data Center and noted that card key access devices were in place at the entrances and at various points throughout the Data Center.</p> <p>Attempted to gain access to the Data Center with an unauthorized card key and incorrect PIN and noted that access was not allowed.</p> <p>Observed the computer room and noted that card key access devices were in place at the entrances and at various points throughout the Data Center.</p> <p>Attempted to gain access to the computer room with an unauthorized card key and incorrect PIN and noted that access was not allowed.</p> <p>No Exceptions Noted.</p>
<p>3.2 The Data Center has raised floors in the computer room, is equipped with automatic fire detection and suppression systems, an Uninterruptible Power Supply (UPS) and HVAC. Environmental conditions are monitored from the Facilities Console Room.</p>	<p>Observed the Springfield Data Center and noted that it had raised floors in the computer room, a monitoring Facilities Console Room and was equipped with automatic fire detection and suppression systems, a UPS and HVAC.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>3.3 The Data Center management and/or Data Center Planning must approve permanent access requests to the Springfield Data Center before Corporate Security Management grants access.</p>	<p>Inspected access request forms and access rights granted for a selection of personnel granted permanent access to the Springfield Data Center and determined that permanent access was authorized by Data Center management and/or Data Center Planning and that the access was granted as authorized.</p> <p>No Exceptions Noted.</p>
<p>3.4 Data Center Manager(s), Data Center Operations Duty Manager(s), Operations delegate(s) or Data Center Planning must approve temporary access requests to the Springfield Data Center on access request forms before Corporate Security Management grants access.</p> <p>The Card Access System automatically removes temporary data center access upon expiration.</p>	<p>Inspected access request forms for a selection of personnel granted temporary access to the Springfield Data Center and determined that access was authorized by ETX personnel prior to access being granted by Corporate Security Management.</p> <p>KPMG observed a user attempt to access the data center with a temporary access card which had expired and determined that data center access was not permitted.</p> <p>No Exceptions Noted.</p>
<p>3.5 Data Center management performs a review of and signs-off on the Springfield Data Center access list on a monthly basis to determine that only appropriately authorized personnel have permanent access to the Springfield Data Center based on their job responsibilities.</p>	<p>Inspected Data Center Access Review lists and sign-offs for a selection of months and determined that ETX personnel performed the monthly reviews. Additionally, inspected the current data center access list and determined that users identified on the previous month's report as no longer requiring access had been removed.</p> <p>No Exceptions Noted.</p>
<p>3.6 Human Resources will notify ETX personnel of employee terminations via a termination report. Data Center access is revoked for terminated personnel upon this notification by the Security team.</p>	<p>Inspected the HR termination reports, and Data Center access reports indicating badge access rights for a selection of terminations and determined that HR notified ETX personnel regarding employee terminations via a termination report, and Data Center access was revoked for the terminated personnel upon receipt of this notification by ETX personnel.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
3.7 Power generators, HVAC, fire detection, and fire suppression equipment installed in the Springfield Data Center Operations are appropriately maintained.	Inspected the maintenance event documentation for the power generators, HVAC equipment, fire detection and fire suppression systems equipment installed in the Springfield Data Center and determined that the equipment was maintained. No Exceptions Noted.
3.8 The Card Access System is located in the secured Springfield campus Data Center.	Observed that the Card Access System was located in the Springfield campus Data Center and noted that card key devices were in place to secure access to the Data Center. No Exceptions Noted.
3.9 Administrator access to add, change, or delete user access in the Card Access system is limited to authorized Security personnel based on their job responsibilities.	Inspected the administrator access list for the Card Access System and inquired of ETX personnel and determined that persons authorized to add, change, or delete user access were Security personnel with appropriate job responsibilities. No Exceptions Noted.

Complementary User Entity Controls
<ul style="list-style-type: none"> Plan Sponsors should have controls in place to establish, monitor and maintain physical access to MassMutual web systems via terminals at Plan Sponsor locations.

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General Information Technology Controls: Logical Access

Control Objective 4
Controls provide reasonable assurance that logical access to production programs, data and system infrastructure is limited to authorized personnel.

Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>MassMutual uses various computer platforms to support recordkeeping application processing. The following provides a key to the platforms that support the applications in use.</p> <p>A = IBM Mainframe = A1 (PAS) I = Internet = I1 (RetireSMARTSM) + I2 (TRC) + I3 (RetireSMARTSM Mobile app) + I4 (AMC) S = Software-as-Service = S1 (TRAC) + S2 (OMNI) + S3 (Matrix) + S4 (AWD) + S5 (Quickbase) U = Unix = U1 (PRS) + U2 (CaRS) W = Windows = W1 (Unival) + W2 (Fundlinx) + W3 (LVAdmin) + W4 (CAS) + W6 (PowerImage/OMNI Workflow) + W7 (Recon Suspense) + W8 (Tracer) + W9 (ADSR/OMNIPay) + W10 (TCC) + W11 (TreX) + W12 (CA Workload Automation AE) + W13 (DataSMART)</p>	
<p>4.1 MassMutual maintains a formal Corporate Compliance Guide and documented Security Policies to inform users of their privileges and responsibilities related to system access and use. (A1, I1-3, S1-3, U1-2, W1-4,6-11)</p>	<p>Inspected the Corporate Compliance Guide and documented Security Policies and determined that the documents defined user rights and responsibilities related to system access and use.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>4.2 Internet access to and from the MassMutual's network, including access by Participants and Sponsors through the Internet, are controlled by firewall systems installed at each Internet access point within the network DMZ.</p> <p>The firewalls are configured with a default deny policy and are configured to permit authorized services only.</p> <p>The Internet web servers reside within the internal network. Administrative access to the firewall is restricted to the ETX Operations Firewall Network Support team.</p> <p>(A1, I1-3, U1-2, W1-4, 6-11)</p>	<p>Inspected network diagrams and determined that firewalls were present at the various Internet access points to control traffic in and out of the DMZ.</p> <p>Inspected the security policies for a selection of firewalls and inquired of firewall administrators and determined that a default deny policy was used and that the policies were configured to permit only authorized services.</p> <p>Inspected a list of persons with administrator access to firewalls and their respective job titles and determined that access was limited to ETX Operations Firewall Network Support team.</p> <p>No Exceptions Noted.</p>
<p>4.3 A third party vendor provides 24x7x365 security event monitoring and reporting on any suspicious activity that occurs through MassMutual's network perimeter. Follow-up actions are taken as necessary.</p> <p>(A1, I1-3, S1-3, U1-2, W1-4, 6-11)</p>	<p>Inspected vendor contract that described network security monitoring services provided to ETX during the period and determined that 24x7x365 real-time network security monitoring services was contracted by ETX.</p> <p>Inspected a selection of vendor generated security e-mail alerts received during the period and determined the emails contained security events and reports of suspicious activity and follow-up actions, if required were documented.</p> <p>No Exceptions Noted.</p>
<p>4.4 Requests for access are submitted through a ticket in the Request Tool and approved by Department Managers. The Enterprise Services Onboarding/Access Management Team grants the requested access only after proper authorization is complete. User privileges are assigned to users based on job responsibilities.</p> <p>(A1, S1-3, U1-2, W1-4,10)</p>	<p>Inspected new system access permissions Request Tickets and sign-offs for a selection of new access requests and determined that ETX personnel authorized the user access and that the access was granted as authorized.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>4.5 The Enterprise Services Onboarding/Access Management Team TRC Security Administrators grant TRC user access to Plan Sponsors only upon receipt of a completed and authorized Security Application form received and approved by a Plan Sponsor or a designated MassMutual agent.</p> <p>(I2)</p>	<p>Inspected the Security Application forms and sign-offs for a selection of plan administrators granted access to TRC and determined that the forms were complete and authorized by a Plan Sponsor or a designated MassMutual agent.</p> <p>No Exceptions Noted.</p>
<p>4.6 Business management annually reviews a system listing of PAS, TRAC, OMNI, Matrix, PRS, CaRS, Unival, Fundlinx, LVAdmin, CAS and TCC application user access and privileges for appropriateness using the review tool and authorizes the review tool administrator to retain or remove access as necessary.</p> <p>Administrator access to the review tool is restricted to personnel based on job responsibilities.</p> <p>(A1, S1-3, U1-2, W1-4,10)</p>	<p>Inspected supporting user access review documentation (including access roles, system generated user access lists, management review results, review audit trails, and change requests initiated as a result of the access review) for the PAS, TRAC, OMNI, Matrix, PRS, CaRS, Unival, Fundlinx, LVAdmin, CAS and TCC applications to determine whether user access was reviewed annually by Business management and additional steps were taken to revoke access as requested for existing employees.</p> <p>Inspected the system generated list of users with administrator access to the review tool, inspected organizational charts and inquired of management to determine whether access was restricted to personnel based on job responsibilities.</p> <p>Exception Noted.</p> <p>Five of 636 users (total population) on the OMNI list did not feed into the central access system to be included in the annual manager recertification of access performed in June.</p> <p>Management Response:</p> <p>Due to formatting errors on the OMNI listing, the user accounts were not correctly imported into the central access system for review which caused the OMNI user listing to be incomplete. Management reviewed the access of the 5 users in September and determined the access was appropriate based upon job responsibilities. Further, management determined that 4 of the 5 users had been terminated between July and September and did not have access to any MM systems post termination.</p> <p>Additional Testing Performed by KPMG LLP:</p> <p>Inspected management's evidence and determined that 4 of the users were terminated and no longer had MassMutual system access. Further, inquired of management and inspected the job title of the 5 OMNI accounts and determined that the access was appropriate based upon their job responsibilities.</p>

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<p>4.7 On a weekly basis, the user access review system sends employee transfer notifications to Business management to conduct a review to determine if system access is appropriate. Access that is determined to be inappropriate by the manager is forwarded to the appropriate security administrator for removal.</p> <p>Quality checks are performed on a monthly basis to ensure employees and contractors identified by HR as having transferred are captured in the review tool's transfer review and that their user access has been validated. Discrepancies identified are investigated and resolved.</p> <p>(A1, I2, S1-3, U1-2, W1-4,10)</p>	<p>Inspected supporting user access review documentation (including access roles, system generated user access lists, management review results, review audit trails, and change requests initiated as a result of the access review) for a selection of transfers and determined whether access for transferred users was reviewed on a weekly or monthly basis by Business management and additional steps were taken to revoke access as requested for transferred employees.</p> <p>No Exceptions Noted.</p>
<p>4.8 Active Directory (AD) domain password structure is in place with specific password settings including minimum password length, expiration, and user ID lockout after a specified number of invalid logon attempts to prevent unauthorized access. Two-factor (token code & password) authentication is in place for users logging into AD remotely via RSA or Okta.</p> <p>(A1, I1-2, S1,5, S3, U1-2, W1-4, 6-13)</p>	<p>Inspected a system generated query of the AD password control parameter settings and determined that the AD domain was configured with specific password settings including minimum password length, and expiration, and user ID lockout after a specified number of invalid logon attempts to prevent unauthorized access.</p> <p>Observed a user log in remotely and determined that a 2 factor authentication was required via RSA or Okta prior to gaining accessing to the MassMutual Network.</p> <p>No Exceptions Noted.</p>

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<p>4.9 The central access control software on the IBM mainframe for PAS password control is configured with specific password settings including minimum password length, structure and expiration and user ID lockout after a specified number of invalid logon attempts to limit unauthorized access.</p> <p>(A1)</p>	<p>Inspected the user password policy configuration for a selection of mainframe users and determined that specific password settings were in place including minimum password length, structure and expiration and user ID lockout after a specified number of invalid logon attempts to limit unauthorized access.</p> <p>No Exceptions Noted.</p>
<p>4.10 Access authentication controls are required and configured on all platforms and applications within the MassMutual business environment.</p> <p>Password parameters, including password life, password length, number of invalid attempts and timeout limits, are required for each system.</p> <p>(I1-2,4, S1-5, U1-2, W1-4,6,10,12,13)</p>	<p>Inspected a system generated query of the password parameter settings and determined that the RetireSMARTSM, TRC, TRAC, PRS, CaRS, OMNI, Unival, Fundlinx, LVAdmin, CAS, Matrix and TCC applications were configured with specific password settings including minimum password length and expiration, and user ID lockout after a specified number of invalid logon attempts to limit unauthorized access.</p> <p>No Exceptions Noted.</p>

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<p>4.11 Participants accessing the RetireSMARTSM application and RetireSMARTSM mobile app are authenticated through central LDAP security software. After a specified number of unsuccessful attempts to enter a valid User ID, the user is directed to the “Forgot Your Login?” page. In addition to requiring a valid User ID, participants are also required to enter a valid password. Passwords have specific settings including a minimum length, structure and expiration period. At any time participants have the ability to reset their Password and/or User ID after first correctly answering several participant knowledge security questions.</p> <p>(I1,I3)</p>	<p>Observed a member of the Production Support Team attempt a number of unsuccessful attempts to enter a valid User ID and noted that they were directed to the “Forgot Your Login?” page.</p> <p>Observed a member of the Production Support Team attempt to sign into RetireSMARTSM and RetireSMARTSM mobile app several times using different password constructs and noted that minimum password length and structure were required.</p> <p>Observed an access attempt to RetireSMARTSM by a Production Support Team member and noted that they were able to reset a Password and/or User ID after first correctly answering several participant knowledge security questions.</p> <p>Inspected a system generated configuration for LDAP and determined that LDAP was configured with specific password settings including minimum password length, structure and expiration, and user ID lockout after a specified number of invalid logon attempts.</p> <p>No Exceptions Noted.</p>
<p>4.12 Plan Sponsors accessing the TRC application are authenticated through LDAP security software. Password structure is in place with specific password settings including minimum password length, structure and expiration, and user ID lockout after a specified number of invalid logon attempts to limit unauthorized access.</p> <p>(I2)</p>	<p>Observed a member of the Production Support Team attempt a number of unsuccessful attempts to enter a User ID and noted that they were locked out.</p> <p>Observed a member of the Production Support Team attempt to modify their password to the TRC plan sponsor portal several times using different password constructs and noted that minimum password length and structure were required.</p> <p>Inspected a system generated configuration for LDAP and determined that LDAP was configured with specific password settings including minimum password length, structure and expiration, and user ID lockout after a specified number of invalid logon attempts.</p> <p>No Exceptions Noted.</p>

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<p>4.13 RetireSMARTSM users may access participant PRS account balances and activity stored in a secured location on the Sybase database. RetireSMARTSM participant passwords are stored in LDAP. Application procedures call upon LDAP when a participant attempts to access the data through RetireSMARTSM.</p> <p>TRC users may access Plan data, participant account balances and activity stored in the secured Sybase database by using an authorized TRC user ID and password which authenticate through central LDAP security software.</p> <p>(I1-2)</p>	<p>Inspected network diagrams and determined that firewalls were present at internet access points and that the Sybase database and LDAP are located inside the firewall.</p> <p>Inspected RetireSMARTSM and TRC password configuration settings and determined that RetireSMARTSM and TRC authenticate through the central LDAP security software.</p> <p>Observed a member of the Production Support sign into RetireSMARTSM and determined that application procedures call upon LDAP to access the data and that a user can only access their participant account balances and activity following use of an authorized RetireSMARTSM user ID and password.</p> <p>Observed a member of the Production Support sign into TRC and determined that a user can only access Plan data and/or participant account balances and activity following use of an authorized TRC user ID and password.</p> <p>No Exceptions Noted.</p>
<p>4.14 Operating system administrator access is restricted to personnel with administrator responsibilities across all platforms.</p> <p>The ability to grant network privileges to MassMutual directories is also restricted to personnel with administrator responsibilities.</p> <p>(A1, I1-3, U1-2, W1-4,10)</p> <p>Management conducts twice yearly privileged access recertification reviews on mainframe, Windows and Unix platforms.</p> <p>(A1, I1-3, U1-2, W1-4,10)</p>	<p>Inspected administrative access lists and inquired of ETX personnel and determined that operating system administrator access was restricted to personnel with administrator responsibilities and that the ability to grant network privileges was restricted to personnel with administrator job responsibilities.</p> <p>Inspected results of one of the semi-annual reviews of privileged system level system access to MassMutual mainframe, Windows and Unix computer platforms and report change annotations and change e-mails and determined that management recertified privileged access and made modifications to access as identified through the review.</p> <p>No Exceptions Noted.</p>

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<p>4.15 Administrator access to databases is restricted across all applications to personnel based on job responsibilities.</p> <p>(A1, I1-2, U1-2, W1-4,10)</p>	<p>Inspected MSSQL, Sybase, Oracle and UDB database system generated access lists and inquired of Operations management and determined that database access was restricted to personnel based on job responsibilities.</p> <p>No Exceptions Noted.</p>
<p>4.16 Application administrator access enabling personnel to grant modify or delete employee/contractor access is restricted to personnel based on job responsibilities.</p> <p>(A1, I1-2,4,S1-2,5, U1-2, W1-4,10-12-13)</p>	<p>Inspected system generated access lists and inquired of ETX personnel and determined that application administrator access was restricted to Production Support and Enterprise Services Onboarding/Access Management Team based on their job title and responsibilities.</p> <p>No Exceptions Noted.</p>
<p>4.17 Business requests for direct data changes is initiated through a Request Ticket or a Request for Change (RFC) and approved by the business or a systems manager. For known errors and data fixes for batch abends, prior approval is not required.</p> <p>(A1, S1-2, U1-2, W2-4)</p>	<p>For a selection of direct data change alerts generated, inspected a Request Ticket or a RFC and associated e-mail approvals and determined that the direct data changes were approved by a business or system manager.</p> <p>No Exceptions Noted.</p>
<p>4.18 The Direct Data Access (DDA) monitoring tool has monitoring rules that are configured to identify all direct data access modifications. The monitoring platform and rules are administered independently of the application system being monitored. Individuals who have direct data access do not have the ability to create or modify monitoring rules.</p> <p>(U1-2, W1-4)</p>	<p>Inspected the DDA monitoring tool's security settings and determined that they were configured to identify direct data changes to database tables and alert an independent monitoring group that changes were made.</p> <p>Observed MassMutual personnel modify data in a production database and noted the automated monitoring tool identified the direct data access modification.</p> <p>No Exceptions Noted.</p>

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<p>4.19 Direct Data Access (DDA) is monitored using an automated monitoring tool. All monitoring rules which are enabled in production require approval through the enterprise change request system. No changes to active rules are made without management approval.</p> <p>(U1-2, W1-4,10)</p>	<p>Inspected a selection of change requests for changes to active DDA rules on the automated monitoring tool and determined that they were approved by business process management.</p> <p>No Exceptions Noted.</p>
<p>4.20 DDA is captured by an automated monitoring tool and systematically input into a Governance, Risk, and Compliance system which automatically generates an e-mail to the responsible Production Support or Business team for review. After review, an appropriate update is made on the entry for documentation purposes before the status is changed, triggering an automated e-mail to the responsible manager for approval and clearance within the next month.</p> <p>(U1-2, W1-4,10)</p> <p>Departmental management review a daily Unival report that lists data changes to detect unexpected or unauthorized changes made to the database.</p> <p>(W1)</p>	<p>Inspected the Governance, Risk and Compliance system and the automated monitoring tool for a selection of DDA events to determine whether the DDA changes were captured in the automated monitoring tool, reviewed by the responsible Production Support or Business team and approved by the responsible manager within the next month.</p> <p>Inspected configuration settings within the Governance, Risk and Compliance system to determine whether it was configured to trigger an automated e-mail to the responsible Production Support or Business team for review.</p> <p>Observed Production Support personnel modify data in a production table to determine whether the DDA change was captured in the automated monitoring tool and the Governance, Risk, and Compliance system that automatically generated e-mails to the responsible reviewer and manager for clearance.</p> <p>Inspected the daily Unival report for a selection of days that lists changes to the Unival database to determine whether the report was reviewed by management to identify unexpected or unauthorized changes and that management researched and resolved identified changes.</p> <p>Exception Noted.</p> <p>Through an observation, a TCC DDA change was not captured within Imperva.</p>

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<p>4.20 (Continued) DDA is captured by an automated monitoring tool and systematically input into a Governance, Risk, and Compliance system which automatically generates an e-mail to the responsible Production Support or Business team for review. After review, an appropriate update is made on the entry for documentation purposes before the status is changed, triggering an automated e-mail to the responsible manager for approval and clearance within the next month.</p> <p>(U1-2, W1-4,10)</p> <p>Departmental management review a daily Unival report that lists data changes to detect unexpected or unauthorized changes made to the database.</p> <p>(W1)</p>	<p>Management Response:</p> <p>Management reviewed the situation and determined that Imperva was not monitoring changes to TCC during the time period of 1/01/2020 - 8/03/2020. A table name change was made in 1/01/2020 without notifying the Imperva admins which caused monitoring to drop for TCC. Management corrected a table name parsing issue on 8/03/2020 to restore monitoring. Due to a system documentation limitation, management was unable to perform a lookback assessment of activity for the period. However, management inspected a listing of users with access to execute changes on the back end database tables and determined that only 2 individuals had access during the outage period. Management reviewed the 2 individuals and determined that database authority is appropriate and commensurate with their database administrator roles and responsibilities.</p> <p>Additional Testing Performed by KPMG LLP:</p> <p>Post remediation observed a user make a TCC change and determined that the TCC change was captured in the Imperva tool. KPMG also reviewed the 2 individuals that had access to execute changes on the back end table and determined that access was based upon job responsibilities.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>4.21 The ability to create, delete, or change user access to AWD and PowerImage/OMNI Workflow document imaging display and workflow systems are restricted to personnel based on their job responsibilities. This capability is restricted to authorized personnel whose job responsibilities include managing user access.</p> <p>(S4, W6)</p>	<p>10/1/2019-11/1/2019</p> <p>Inquired of management regarding PowerImage administrator and was informed once the system was decommissioned system records of Powerimage administrators were not retained, therefore the operating effectiveness of PowerImage could not be tested from 10/1/2019-11/1/2019.</p> <p>Management Response:</p> <p>PowerImage was only in use for the first month (10/1/2019-11/1/2019) of the audit period as a scanning tool for business documents and decommissioned after being replaced with a new tool. There was a limited number of users that had administrative access and evidence was obtained demonstrating no changes were made within the month. Therefore, the lack of admin evidence does not present a significant risk.</p> <p>11/2/2019-9/30/2020</p> <p>Inspected the system generated lists of users with AWD and OMNI Workflow user administrator access, inspected organizational charts and inquired of management and determined that access to create, delete, or change user access was restricted to those authorized personnel whose job responsibilities included managing AWD and Workflow user access.</p> <p>No Exceptions Noted.</p>
<p>4.22 Administrator access to the CMS is restricted to personnel based on job responsibilities.</p> <p>(A1, I1-2, S1,U1-2, W1-4, 6-11)</p>	<p>Inspected the system generated lists of users with administrator access to the CMS, inspected organizational charts and inquired of management and determined that the access was restricted to users based on job responsibilities.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>4.23 For full-time employees and contractors, the Security Identity Management system receives a feed from the HR system for scheduled terminations and Security Identity Management automatically disables the terminated employee's network accounts. In the event of an immediate termination a telephone call is made to initiate the disablement of access and is followed up by a confirmation email.</p> <p>Administrator access to Security Identity Management is restricted to personnel based on job responsibilities.</p> <p>(A1, I1-2, S1, S3, U1-2, W1-4,6-11)</p>	<p>Inspected AD system records for a selection of full-time employee and contractor terminations and determined that they were removed from AD or disabled on a timely basis.</p> <p>Inspected Security Identity Management system configurations and determined that the system was configured to automatically revoke network access upon termination.</p> <p>Selected a full-time employee and a contractor with future termination dates, inspected HR system screen shots, AD screen shots, and Security Identity Management screen shots before and after termination and determined that the Security Identity Management system received a feed from the HR systems for scheduled terminations and the Security Identity Management system automatically disabled the terminated employee's and contractor's network accounts.</p> <p>Inspected the system generated list of users with administrator access to the Security Identity Management system, inspected organizational charts and inquired of management and determined that the access was restricted to users based on job responsibilities.</p> <p>No Exceptions Noted.</p>
<p>4.24 System listings of orphaned IDs with access to PAS, TRC, TRAC, PRS, CaRS, OMNI, Unival, Fundlinx, LVAdmin, CAS, RetireSmart, Matrix, and TCC applications are researched and reviewed at least semiannually for appropriateness and access is removed as necessary.</p> <p>(A1, I1-2, S1-3, U1-2, W1-4,10)</p>	<p>Inspected supporting documentation for a selection of orphaned ID reports and determined whether a review of orphaned IDs was communicated and performed appropriately.</p> <p>For a selection of orphaned ID reports, determined that action was taken on the orphaned IDs listed in a timely manner.</p> <p>No Exceptions Noted.</p>

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Complementary User Entity Controls

- Plan Sponsors should have controls in place to establish and maintain security over each participant's PIN/Password numbers.
- Plan Sponsors should have controls in place to establish and maintain security over their PINs/Passwords.
- Plan Sponsors should have controls in place to timely communicate changes to Plan Sponsors/Administration staff to MassMutual.
- Plan Sponsors should have controls in place to review user access to their Plan and Participant information and their ability to process transactions for appropriateness.
- Plan Sponsors should have controls in place to notify MassMutual in the event that any individual is no longer authorized to have such access or conduct such transactions.

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General Information Technology Controls: Job Processing

Control Objective 5
Controls provide reasonable assurance that production processing and system backups are appropriately scheduled, and deviations from scheduled processing are identified and resolved.

Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>MassMutual uses various computer platforms to support recordkeeping application processing. The following provides a key to the platforms that support the applications in use.</p> <p>A = IBM Mainframe = A1 (PAS) I = Internet = I1 (RetireSMARTSM) + I2 (TRC) U = Unix = U1 (PRS) + U2 (CaRS) W = Windows = W1 (Unival) + W2 (Fundlinx) + W3 (LVAdmin) + W4 (CAS)+ W12 (CA Workload Automation AE)</p>	
<p>5.1 Job scheduling systems are configured to automatically alert ETX Operations and On-call personnel in the event that jobs, including backups, abend.</p> <p>(A1, U1-2, W1-4)</p>	<p>Inspected system generated reports and logs of abend alerts, observed ETX personnel trigger batch job abends and inspected system screen shots for the various job scheduling systems and determined that the job scheduling tools alerted On-call personnel in the event of an abend.</p> <p>No Exceptions Noted.</p>
<p>5.2 Incident tickets are created when significant service interruptions occur and are updated to record the resolution.</p> <p>(A1, I1-2, U1-2, W1-4,12)</p>	<p>Observed ETX personnel open an incident ticket related to a nightly job failure, research the issue and document a resolution and noted that the ticket could not be closed without a reason for closure.</p> <p>Inspected a selection of incident tickets and determined that they were used to document abends and other service interruptions and the abends or service interruptions were followed-up and resolved.</p> <p>No Exceptions Noted.</p>

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Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>5.3 Incremental backups are scheduled and performed for all production servers on a daily basis with full system backup being conducted weekly.</p> <p>(A1, I1-2, U1-2, W1-4)</p>	<p>Inspected the incremental and full backup schedules for all in scope servers and runtime logs for the production MassMutual applications and database systems and determined that incremental backups were scheduled daily and full system backups were performed for production servers on a weekly basis.</p> <p>No Exceptions Noted.</p>
<p>5.4 Access to add, change, or delete job schedules is restricted to ETX Operations and On-call personnel whose job responsibilities include making job schedule changes.</p> <p>(A1, U1-2, W1-4)</p>	<p>Inspected system access listings of persons who can add, change, or delete job schedules in the job scheduling tools and inquired of ETX personnel regarding job titles and determined that access rights were restricted to ETX and On-call personnel whose job responsibilities included making job schedule changes.</p> <p>No Exceptions Noted.</p>

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General Information Technology Controls: Data Transmissions

Control Objective 6
Controls provide reasonable assurance that data transmissions are completed and secure, and failures are identified and resolved.

Controls Specified by ETX	Testing Performed by KPMG LLP and Results of Tests
<p>6.1 In the event that inbound or outbound data transmissions do not complete successfully, error notifications in the form of an e-mail are generated by the data transmission tool and sent to the appropriate job stream owners for follow-up.</p> <p>The job stream owner support groups monitor transmissions throughout the day, review any failure notifications and reschedule transmissions accordingly. Should the issue remain unresolved due to SLA or other dependencies, it is brought into the visibility of Data Center Operations and Data Center Operations team monitors until the issue is resolved.</p>	<p>Observed an inbound and outbound transmission failure and determined that Production Support received transmission failure e-mail alerts and noted that they identified the cause of the transmission failures, re-transmitted the files and received successful transmission responses.</p> <p>Observed that Production Support monitor transmissions throughout their shifts and determined that a transmission failure remained on the Data Center Operations monitor until the error was corrected and when the file was re-transmitted a successful transmission response was received.</p> <p>No Exceptions Noted.</p>
<p>6.2 Administrative access to the data transmission directories is restricted to appropriate members of ETX personnel based on their job responsibilities.</p>	<p>Inspected system generated access lists of users who had administrative permissions to the data transmission directories, inspected organizational charts and inquired of management and determined that access was restricted to ETX personnel based on their job responsibilities.</p> <p>No Exceptions Noted.</p>
<p>6.3 Data files and/or data streams for inbound and outbound data transmissions through the public networks are appropriately encrypted using secured transmission protocols and/or data payload encryption solutions.</p>	<p>Inspected a configuration screenshot of the secure transfer tool and observed a file prior to and after transmission and determined that encryption was enabled and that data files and/or data streams for inbound and outbound data transmissions through the public networks were encrypted.</p> <p>No Exceptions Noted.</p>

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
Defined Benefit and Defined Contribution
Recordkeeping Operations

Complementary User Entity Controls

- Plan Sponsors should have controls in place to review file transmissions from MassMutual for data integrity, completeness and accuracy.

Section V
Other Information Provided by MassMutual

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution

Recordkeeping Operations

Business Continuity Planning

MassMutual's recovery strategy is focused on diversification. Data Center recovery utilizes capabilities in another state, currently Colorado, intended to protect against the impact from regional disasters and multiple replication/backup technologies are used to protect against hardware failure. Workspace recovery is available within multiple MassMutual-owned buildings in Massachusetts and Connecticut, many of which have generator backup and diverse paths for network and utilities.

The primary Data Center in Massachusetts has been outfitted with an uninterruptible power supply (UPS) and N+1 generation capacity. Should there be a larger issue, systems are backed up to MassMutual-owned hardware in Colorado (1700 miles away). MassMutual's home office in Springfield has also been backed up with generators; capable of powering around 3,700 workstations, more than we believe would be needed for the first 30 days of a recovery event. If workspace becomes unavailable in the MassMutual home office in Springfield or the office in Enfield, Connecticut, employees may be relocated to the office not impacted or may work remotely. MassMutual has established critical operations and workspace outside of its home office region in Boston, New York and Phoenix.

MassMutual maintains a continuity planning program that is intended to address, among other things, facility/systems failure due to cyber threats, pandemics and third party outages. MassMutual's business continuity program was born out of Business Impact Analysis (BIA) results. MassMutual has opted to keep BIA results live within the body of the business continuity plan, requiring that information to be reviewed at least semi-annually and as there are changes within the business line. Company policy states that all business functions must be covered by a business continuity plan that is maintained in the Company's web-based planning tool.

MassMutual maintains three types of technical continuity plans: Application, Infrastructure and Processor. Recovery Time Objectives and Recovery Point Objectives are governed by business continuity plan priorities. Essential applications are generally replicated using near-real-time replication to Colorado, while non-essential applications are backed up using virtual tape backup to Colorado. Essential applications are generally restored in less than 24 hours. By policy, all technology in the Data Center must be covered by the appropriate technical continuity plan in the Company's web-based planning tool.

Emergency response testing is done throughout the year and includes Crisis Management Team simulations, evacuation drills and exercising of specialized plans, such as Pandemic Response, Customer Disaster Response, Aircraft Incident and others. Information Technology disaster recovery testing is conducted on an annual basis and includes essential applications and a rotation of non-essential applications. Finally, business continuity testing is conducted throughout the year and includes annual testing through an online simulator, division-level simulations, tabletop walkthroughs and participation in the annual IT disaster recovery test. In addition to planned testing, internal auditors have an active role in auditing continuity plans and test results across the Company. When potential issues are identified, such issues are documented, assigned an owner and tracked through to completion. Plan maintenance is handled through regularly scheduled reviews. Continuity plans and the hardware/application inventory in the Company's Configuration Management Database are validated annually. Finally, ongoing reviews are conducted throughout the year to ensure all processes and technology items are covered by continuity plans and to ensure they meet the Company's Guiding Principles framework within the company policy for recovery prioritization.

Technical Support Teams provide support for continuity of critical business operations 24x7x365. MassMutual's Office of Enterprise Resilience annually reviews the Business Continuity and Disaster Recovery plans for critical third parties.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

Defined Benefit and Defined Contribution

Recordkeeping Operations

Pandemic Planning at MassMutual and impact of COVID-19

MassMutual has maintained a Pandemic Response Plan for over 15 years. The plan is organized in three phases: Monitoring, Partial Activation and Full Activation and utilizes specific trigger events to direct the actions that will be put in place for each phase. Because MassMutual is a global firm, the plan does allow for different operating locations to be in different phases depending on what is happening in a given region. This plan was utilized in the current COVID-19 crisis and directed the actions as the event evolved in the US and around the world.

MassMutual has been able to effectively respond to the challenges caused by COVID-19. Over 98% of the workforce was transitioned to work-from-home beginning in March 2020, before any known cases were identified in the workforce. Collaboration tools, largely electronic workflows, and a robust IT infrastructure have helped to ensure the workforce remains productive and able to process transactions. In Q1 and Q2 2020, MassMutual responded to the requirements of the CARES act passed by congress and modified systems and processes, where appropriate, to meet customer needs. MassMutual continues to closely monitor the situation and is prepared to adjust as the pandemic evolves. Despite the devastation caused by this terrible disease globally, MassMutual continues to operate from a position of strength and has been able to maintain effective controls across all lines of business.

COVID-19 Impact on Internal Controls

The coronavirus pandemic (COVID-19) has had minimal impact on control activities within the scope for this report. In addition, the pandemic has had little impact on the services we provide our members and employers. The majority of services can be conducted remotely, and that has allowed us to safeguard the health and well-being of our staff, our members and our participating employers. Despite the disruption COVID-19 has caused to the economy, we have continued to distribute benefit payments on time, process retirement and withdrawal applications, and maintain our technological infrastructure with no lapse in service. MassMutual continues to monitor internal controls, including controls that have been temporarily adjusted during the pandemic, to ensure they are operating effectively.



Fiduciary Investment Review™

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County of San Mateo

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About NFP



The **NFP**[®] Way

N *Nimble*

- Listen well to understand what's important.
- Encourage creativity and fresh perspectives.
- Look to the future, anticipating the needs of our employees and clients.

F *Fantastic Results*

- Collaborate and work as a team.
- Earn trust by exceeding expectations.
- Deliver peace of mind through amazing performance.

P *Personal*

- Respect each other. We all matter.
- Build enduring relationships.
- Give back.
- Be real. Be authentic. Be genuine.

Retirement Services Overview



Fiduciary Support

Comprehensive and ongoing fiduciary guidance, training and support to mitigate potential liabilities



Fee Benchmarking

RFP driven process to ensure apple-to-apple comparisons and to maximize a plan's negotiating leverage



Investment Analysis

Proprietary fund ranking system to enhance outcomes, manage risks and reduce fiduciary exposure



Target Date Fund Consulting

Advanced risk-based suitability process to identify a "best-fit" target date fund series that is right for your plan



Holistic Benefits Design

Plan design assessments to increase an employer's benefits ROI while enhancing participant retirement outcomes



Employee Engagement

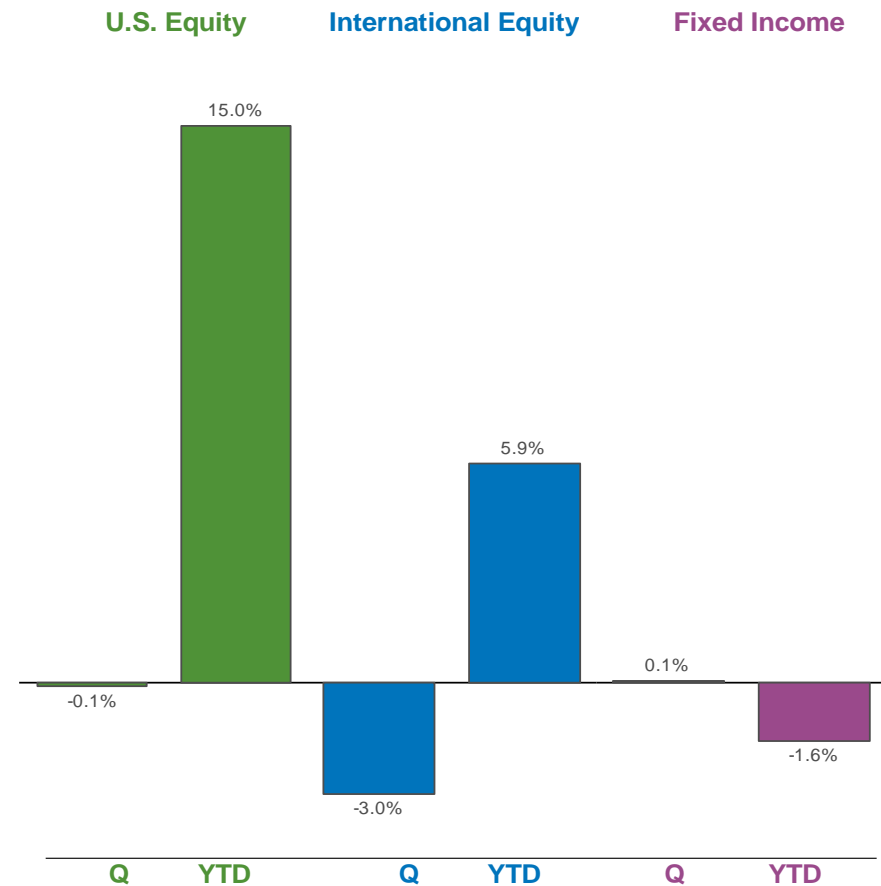
Highly customized plan participant content structured to help optimize outcomes and increase financial wellness

Q3 2021 Market Review

SUMMARY

- U.S. equity markets (Russell 3000) were essentially flat in the third quarter despite continued economic improvement and resurgent corporate profits.
- International equities declined modestly, posting a 3% loss over the quarter (MSCI ACWI ex U.S.).
- The broad U.S. fixed income market was up 0.1% for the quarter (Bloomberg Barclays Aggregate) as longer-term interest rates moved slightly higher. Interest rates on the 10-year Treasury rose by about 7 basis points over the quarter.
- The U.S. labor market improved during the third quarter with unemployment dropping to 4.8% in September. Additionally, U.S. job openings hit a record high.
- For the second quarter in a row, large-cap growth stocks led the market with the Russell 1000 Growth outperforming the Russell 1000 Value by almost 2 percentage points this quarter.
- The Federal Reserve kept rates at nearly zero during the quarter and signaled their expectation of near-term asset purchase tapering. Additionally, half of the Fed members now expect a rate hike in 2022.

TRAILING RETURNS (9/30/2021)



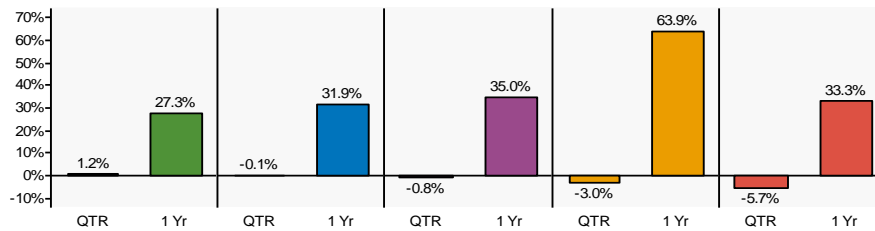
Quarterly and year-to-date returns of the following indices: U.S. Equity (Russell 3000 Index), Fixed Income (Bloomberg Barclays U.S. Aggregate Bond Index) and International Equity (MSCI ACWI ex U.S. Index)

Q3 2021 Market Review – U.S. Equity

U.S. EQUITY

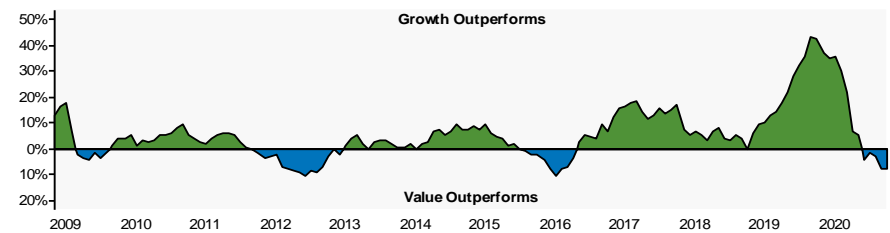
- The broad U.S. equity market, as measured by the Russell 3000 Index, was down 0.1% for the quarter.
- The best performing U.S. equity index for the quarter was Russell 1000 Growth, returning a positive 1.2%.
- The worst performing U.S. equity index for the quarter was Russell 2000 Growth, returning a negative 5.7%.

INDEX PERFORMANCE (sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Russell 1000 Growth	1.2	14.3	27.3	22.0	22.8	19.7
Russell 3000	-0.1	15.0	31.9	16.0	16.9	16.6
Russell 1000 Value	-0.8	16.1	35.0	10.1	10.9	13.5
Russell 2000 Value	-3.0	22.9	63.9	8.6	11.0	13.2
Russell 2000 Growth	-5.7	2.8	33.3	11.7	15.3	15.7

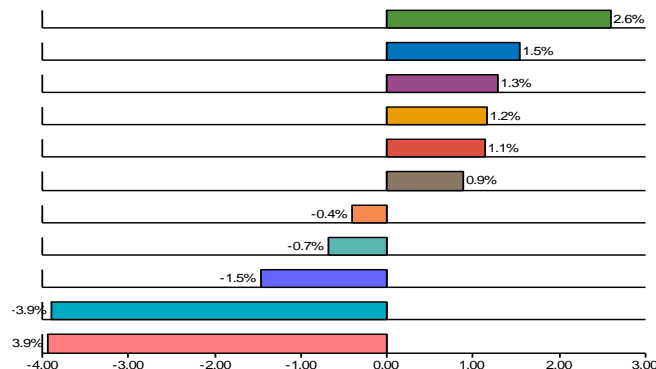
GROWTH VS. VALUE



Over the last year, value stocks outperformed growth stocks by 7.7%.
For the trailing quarter, growth stocks outperformed value stocks by 2%.

The graph above is plotted using a rolling one-year time period. Growth stock performance is represented by the Russell 1000 Growth Index. Value stock performance is represented by the Russell 1000 Value Index.

SECTOR (sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Financials	2.6	28.4	59.6	12.7	16.0	16.7
Telecommunication Svcs.	1.5	21.4	38.4	19.8	12.4	12.4
Utilities	1.3	4.5	12.0	9.4	8.9	10.7
Health Care	1.2	13.1	23.2	12.3	14.5	17.4
Information Technology	1.1	15.0	29.8	26.8	27.9	22.8
Real Estate	0.9	23.0	33.2	12.5	9.0	12.4
Consumer Discretionary	-0.4	11.8	22.6	16.4	18.7	19.2
Consumer Staples	-0.7	4.8	11.8	11.8	8.5	12.0
Energy	-1.5	45.0	86.3	-7.6	-2.2	1.5
Materials	-3.9	11.3	29.6	12.3	12.5	13.0
Industrials	-3.9	12.0	30.9	10.1	13.0	15.4

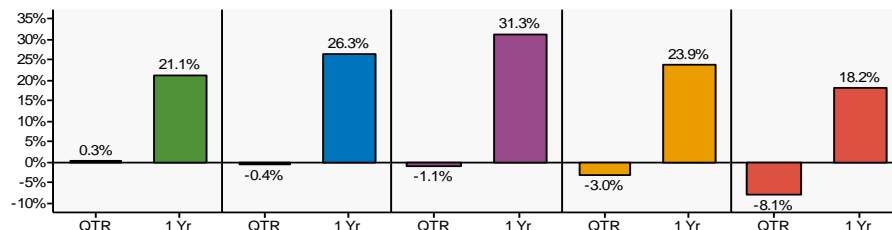
Source: S&P 1500 Sector Indices

Q3 2021 Market Review – International Equity

INTERNATIONAL EQUITY

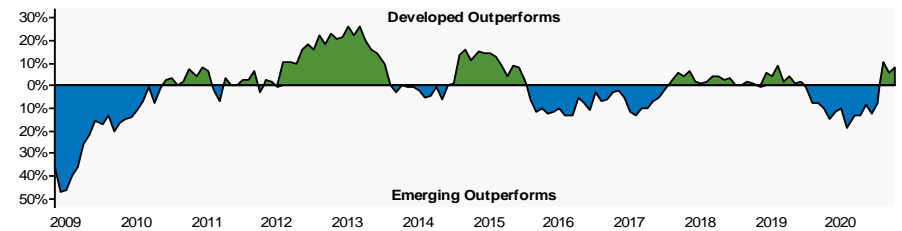
- Developed international equity returned a negative 0.4% in the last quarter (MSCI EAFE).
- Emerging market equity posted a negative 8.1% return (MSCI Emerging Markets Index).

INDEX PERFORMANCE (sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
MSCI EAFE Large Growth	0.3	7.3	21.1	12.8	11.9	10.2
MSCI EAFE	-0.4	8.8	26.3	8.1	9.3	8.6
MSCI EAFE Large Value	-1.1	10.2	31.3	2.9	5.8	5.6
MSCI ACWI ex US	-3.0	5.9	23.9	8.0	8.9	7.5
MSCI Emg Markets	-8.1	-1.2	18.2	8.6	9.2	6.1

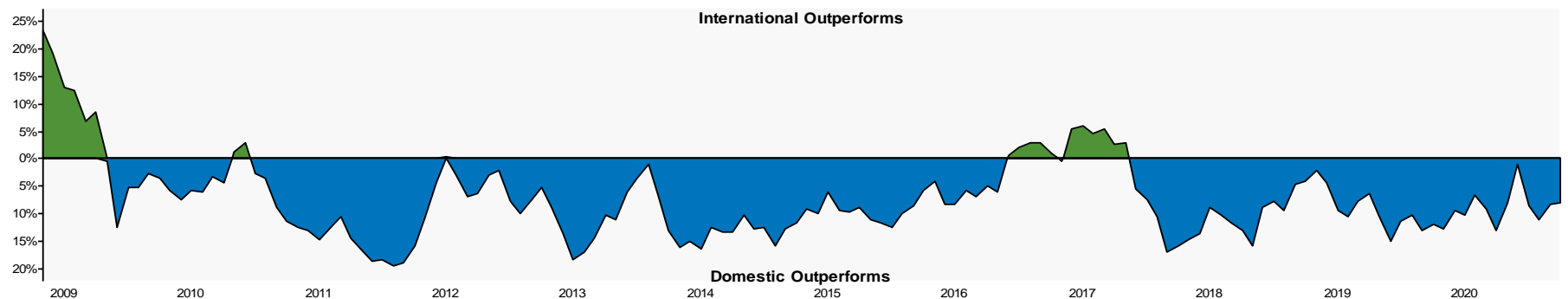
DEVELOPED VS. EMERGING MARKETS



Over the last year, developed international stocks outperformed emerging market stocks by 8.1%.
For the trailing quarter, developed international stocks outperformed emerging market stocks by 7.7%.

The graph above is plotted using a rolling one-year time period. Developed international stock performance is represented by the MSCI EAFE Index. Emerging market stock performance is represented by the MSCI Emerging Markets Index.

INTERNATIONAL VS. DOMESTIC



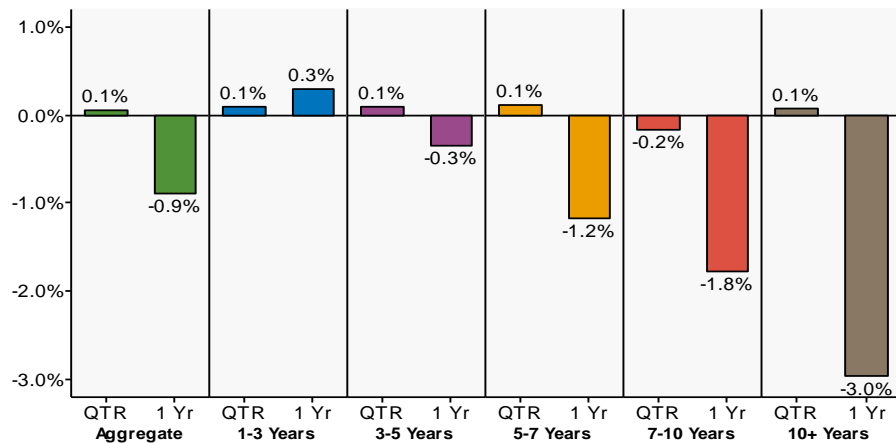
The graph above is plotted using a rolling one-year time period. International stock performance is represented by the MSCI ACWI ex U.S. Index. Domestic stock performance is represented by the Russell 3000 Index.

Q3 2021 Market Review – Fixed Income

FIXED INCOME

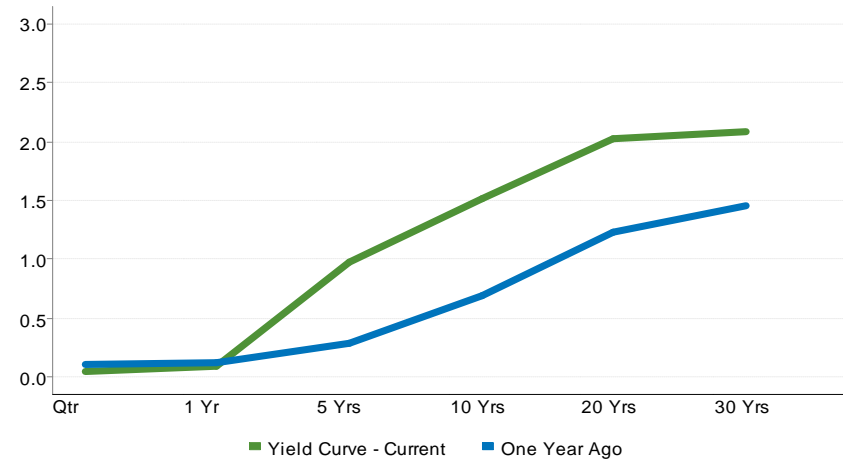
- The broad U.S. fixed income market returned a positive 0.1% (Bloomberg Barclays U.S. Aggregate) for the quarter.
- The best performing sector for the quarter was TIPS, returning a positive 1.8%.
- The worst performing sector for the quarter was Corporate Investment Grade, returning 0%.

PERFORMANCE BY MATURITY

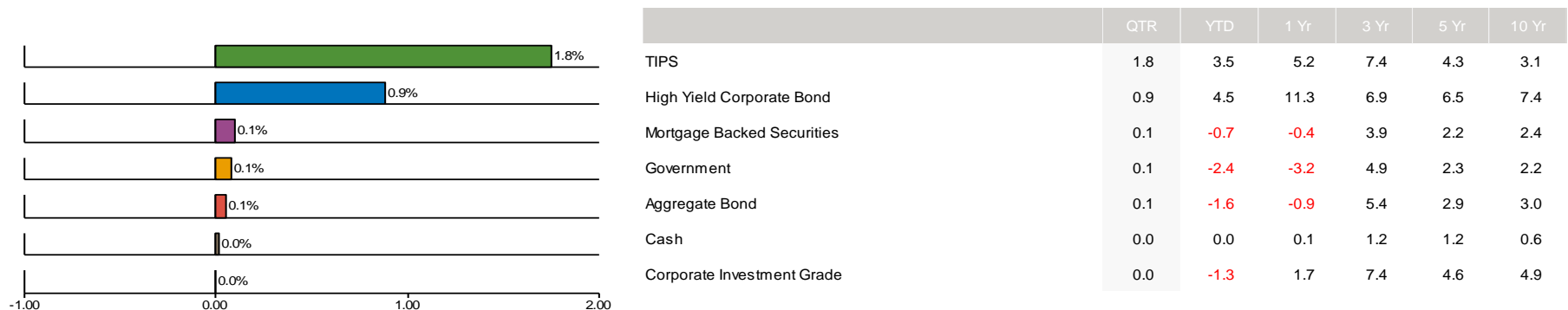


Source: Bloomberg Barclays U.S. Aggregate Indices

YIELD CURVE



SECTOR (sorted by trailing quarterly performance)



Source: Bloomberg Barclays U.S. Indices

Q3 2021 Market Kaleidoscope

ASSET CLASS RETURNS

The following chart exhibits the volatility of asset class returns from year to year by ranking indices in order of performance, highlighting the importance of diversification.

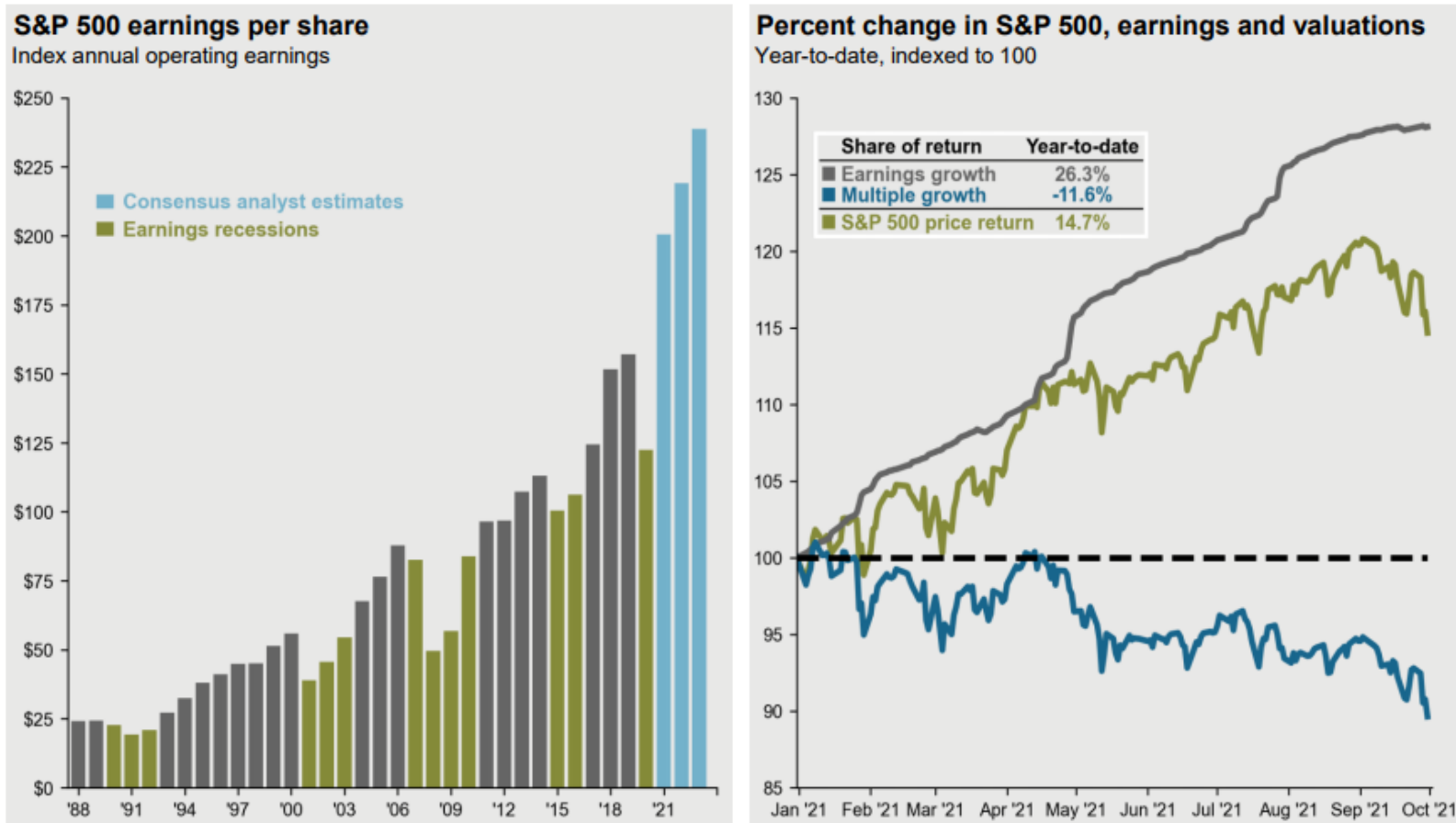
2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD
Sm Growth 29.09	Fixed Income 7.84	Global REIT 23.73	Sm Growth 43.30	Global REIT 22.81	Large Growth 5.67	Sm Value 31.74	Large Growth 30.21	Cash 1.87	Large Growth 36.39	Large Growth 38.49	Commodities 29.13
Sm Value 24.50	Large Growth 2.64	Sm Value 18.05	Sm Value 34.52	Large Value 13.45	Global REIT 0.59	Large Value 17.34	International 27.19	Fixed Income 0.01	Sm Growth 28.48	Sm Growth 34.63	Sm Value 22.92
Global REIT 23.44	Global REIT 1.70	Large Value 17.51	Large Growth 33.48	Large Growth 13.05	Fixed Income 0.55	Commodities 11.77	Sm Growth 22.17	Large Growth -1.51	Large Value 26.54	Balanced Index 15.07	Global REIT 17.70
Commodities 16.83	Balanced Index 1.26	International 16.83	Large Value 32.53	Balanced Index 6.56	Cash 0.05	Sm Growth 11.32	Balanced Index 15.00	Balanced Index -4.70	Global REIT 24.49	International 10.65	Large Value 16.14
Large Growth 16.71	Large Value 0.39	Large Growth 15.26	International 15.29	Fixed Income 5.97	Balanced Index -0.55	Large Growth 7.08	Large Value 13.66	Global REIT -4.77	Sm Value 22.39	Fixed Income 7.51	Large Growth 14.30
Large Value 15.51	Cash 0.10	Sm Growth 14.59	Balanced Index 14.92	Sm Growth 5.60	Sm Growth -1.38	Balanced Index 7.06	Global REIT 8.63	Large Value -8.27	International 21.51	Sm Value 4.63	Balanced Index 6.45
Balanced Index 12.21	Sm Growth -2.91	Balanced Index 11.76	Global REIT 2.81	Sm Value 4.22	Large Value -3.83	Global REIT 6.90	Sm Value 7.84	Sm Growth -9.31	Balanced Index 20.02	Large Value 2.80	International 5.90
International 11.15	Sm Value -5.50	Fixed Income 4.22	Cash 0.07	Cash 0.03	International -5.66	International 4.50	Fixed Income 3.54	Commodities -11.25	Fixed Income 8.72	Cash 0.67	Sm Growth 2.82
Fixed Income 6.54	Commodities -13.32	Cash 0.11	Fixed Income -2.02	International -3.87	Sm Value -7.47	Fixed Income 2.65	Commodities 1.70	Sm Value -12.86	Commodities 7.69	Commodities -3.12	Cash 0.04
Cash 0.13	International -13.71	Commodities -1.06	Commodities -9.52	Commodities -17.01	Commodities -24.66	Cash 0.33	Cash 0.86	International -14.20	Cash 2.28	Global REIT -8.11	Fixed Income -1.55

- Large Value (Russell 1000 Value)
- Large Growth (Russell 1000 Growth)
- Small Value (Russell 2000 Value)
- Balanced (40% Russell 3000, 40% Bloomberg Barclay's U.S. Aggregate, 20% MSCI ACWI ex US)
- Small Growth (Russell 2000 Growth)
- International (MSCI ACWI ex-US)
- Fixed Income (Bloomberg Barclays Agg)
- Global REIT (S&P Global REIT)
- Commodities (Bloomberg Commodities)
- Cash (Merrill Lynch 3-Mo T-Bill)

Q3 2021 Market Review – Chart of the Quarter

Corporate Profits

The post-pandemic economic recovery has taken hold with resurgent corporate profit growth. Year-to-date, the S&P 500 is up almost 15% despite significant P/E multiple contraction as corporate earnings increased by over 26% and drove the market higher.



Sources: JP Morgan Asset Management, FactSet, Compustat, Standard & Poor's, Historical EPS levels are based on annual operating earnings per share. Earnings estimates are based on estimates from Standard & Poor's and FactSet. Data are as of September 30, 2021.

Q3 2021 Disclosures

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

Citigroup Corporate Bond is an index which serves as a benchmark for corporate bond performance. You cannot invest directly in an index.

Citigroup Mortgage Master is an index which serves as a benchmark for U.S. mortgage-backed securities performance.

Citigroup WGBI Index is an index which serves as a benchmark for global bond performance, including 22 different government bond markets.

Credit Suisse High Yield Index is an unmanaged, trader priced index constructed to mirror the characteristics of the high yield bond market.

Bloomberg Barclays U.S. Aggregate Bond (BB Aggregate Bond) represents securities that are U.S., domestic, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

BC Credit Bond Index includes publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.

BC U.S. Corporate Investment Grade represents investment grade corporate securities that are U.S., domestic, taxable, and dollar denominated.

BC High Yield Corporate Bond represents below investment grade corporate securities that are U.S., domestic, taxable, and dollar denominated.

BC TIPS Index includes publicly issued U.S. government treasury inflation protected securities that meet the specified maturity, liquidity and other requirements.

BC Mortgage-Backed Securities covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARMs) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

BC Muni Bond covers the USD-denominated long-term tax-exempt bond market with four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

BC Government Index includes publicly issued U.S. government securities that meet the specified maturity, liquidity and other requirements.

BarCap U.S. Aggregate 1-3 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 1-3 years.

BarCap U.S. Aggregate 3-5 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 3-5 years.

BarCap U.S. Aggregate 5-7 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 5-7 years.

BarCap U.S. Aggregate 7-10 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 7-10 years.

BarCap U.S. Aggregate 10+ Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over 10 years.

DJW 5000 (Full Cap) Index measures the performance of all U.S. common equity securities, and serves as an index of all stock trades in the U.S.

MSCI FI Emerging Markets is a rules-based index which serves as a benchmark for emerging country fixed income performance.

MSCI FI EAFE International is a rules-based index which serves as a benchmark for developed international country fixed income performance.

MSCI EAFE Index is listed for foreign stock funds (EAFE refers to Europe, Australia and Far East). Widely accepted as a benchmark for international stock performance, it is an aggregate of 21 individual country indexes.

MSCI EAFE Large Value represents the large cap value stocks within the MSCI EAFE Index.

MSCI EAFE Large Growth represents the large cap growth stocks within the MSCI EAFE Index.

MSCI EAFE Mid Value represents the mid cap value stocks within the MSCI EAFE Index.

MSCI EAFE Mid Growth represents the mid cap growth stocks within the MSCI EAFE Index.

MSCI EAFE Small Value represents the small cap value stocks within the MSCI EAFE Index.

MSCI EAFE Small Growth represents the small cap growth stocks within the MSCI EAFE Index.

MSCI EM (Emerging Markets) Index serves as a benchmark for each emerging country. The average size of these companies is (U.S.) \$400 million, as compared with \$300 billion for those companies in the World index.

MSCI World Index is a rules-based index that serves as a benchmark for the developed global equity markets.

MSCI Europe ex UK Index is a rules-based index that serves as a benchmark for Europe's equity markets, excluding the United Kingdom.

MSCI Pacific ex Japan Index is a rules-based index that serves as a benchmark for Asia Pacific's equity markets, excluding Japan.

MSCI United Kingdom Index is a rules-based index that serves as a benchmark for the United Kingdom's equity markets.

MSCI Japan is a rules-based index that serves as a benchmark for Japan's equity markets.

NAREIT All REIT Index includes all tax-qualified REITs with common shares that trade on the New York Stock Exchange the American Stock Exchange or the NASDAQ National Market List.

3-Month T-Bills (90 Day T-Bill Index) are government-backed, short-term investments considered to be risk-free and as good as cash because the maturity is only three months.

Russell 1000 Growth Index is a market-capitalization weighted index of those firms in the Russell 1000 with higher price-to-book ratios and higher forecasted growth values.

Russell 1000 Value Index is a market-capitalization weighted index of those firms in the Russell 1000 with lower price-to-book ratios and lower forecasted growth values.

Russell Top 200 Growth Index is a market-capitalization weighted index of those firms in the Russell Top 200 with higher price-to-book ratios and higher forecasted growth values.

Russell Top 200 Value Index is a market-capitalization weighted index of those firms in the Russell Top 200 with lower price-to-book ratios and lower forecasted growth values.

Russell 2000 Growth Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having higher price-to-book ratio and higher forecasted growth values.

Russell 2000 Index consists of the smallest 2000 companies in the Russell 3000 Index, representing approximately 7% of the Russell 3000 total market capitalization.

Russell 2000 Value Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having lower price-to-book ratio and lower forecasted growth values.

Q3 2021 Disclosures

Russell MidCap Growth Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap Index having higher price-to-book ratio and higher forecasted growth values.

Russell MidCap Index includes firms 201 through 1000, based on market capitalization, from the Russell 3000 Index.

Russell MidCap Value Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap Index having lower price-to-book ratio and lower forecasted growth values.

Russell Top 200 Index consists of the 200 largest securities in the Russell 3000 Index. Russell 3000 Index is a market capitalization weighted index, consisting of 3,000 U.S. common equity securities, reflective of the broad U.S. equity market.

Salomon 1-10 Yr. Governments is an index which serves as a benchmark for U.S. Government bonds with maturities ranging from 1 to 10 years.

S&P 500 Index measures the performance of the largest 500 U.S. common equity securities, and serves as an index of large cap stocks traded in the U.S.

S&P 1500 Energy Index measures the performance of the energy sector in the S&P 1500 Index.

S&P 1500 Industrials measures the performance of the industrial sector in the S&P 1500 Index.

S&P 1500 Financials measures the performance of the financials sector in the S&P 1500 Index.

S&P 1500 Utilities measures the performance of the utilities sector in the S&P 1500 Index.

S&P 1500 Consumer Discretionary Index measures the performance of the consumer discretionary sector in the S&P 1500 Index.

S&P 1500 Consumer Staples Index measures the performance of the consumer staples sector in the S&P 1500 Index.

S&P 1500 Information Technology measures the performance of the information technology sector in the S&P 1500 Index.

S&P 1500 Materials measures the performance of the materials sector in the S&P 1500 Index.

S&P 1500 Health Care measures the performance of the health care sector in the S&P 1500 Index.

S&P 1500 Telecommunications Services Index measures the performance of the telecommunications services sector in the S&P 1500 Index.

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Scorecard System Methodology™

The **Scorecard System Methodology** incorporates both quantitative and qualitative factors in evaluating fund managers and their investment strategies. The **Scorecard System** is built around pass/fail criteria, on a scale of 0 to 10 (with 10 being the best) and has the ability to measure active, passive and asset allocation investing strategies. Active and asset allocation strategies are evaluated over a five-year time period, and passive strategies are evaluated over a three-year time period.

Eighty percent of the fund's score is quantitative (made up of eight unique factors), incorporating modern portfolio theory statistics, quadratic optimization analysis, and peer group rankings (among a few of the quantitative factors). The other 20 percent of the score is qualitative, taking into account things such as manager tenure, the fund's expense ratio relative to the average fund expense ratio in that asset class category, and the fund's strength of statistics (statistical significance). Other criteria that may be considered in the qualitative score includes the viability of the firm managing the assets, management or personnel issues at the firm, and/or whether there has been a change in direction of the fund's stated investment strategy. The following pages detail the specific factors for each type of investing strategies.

Combined, these factors are a way of measuring the relative performance, characteristics, behavior and overall appropriateness of a fund for inclusion into a plan as an investment option. General fund guidelines are shown in the "Scorecard Point System" table below. The Scorecard Point System is meant to be used in conjunction with our sample Investment Policy Statement, in order to help identify what strategies need to be discussed as a "watch-list" or removal candidate; what strategies continue to meet some minimum standards and continue to be appropriate; and/or identify new top-ranked strategies for inclusion into a plan.

Scorecard Point System	
Good:	9-10 Points
Acceptable:	7-8 Points
Watch:	5-6 Points
Poor:	0-4 Points

Scorecard System Methodology™

Target Date Fund Strategies

Target Date Fund strategies are investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached. For this type of investment strategy, the **Scorecard System** is focused on how well these managers can add value from asset allocation. Asset allocation is measured using our **Asset allocation strategies methodology** and manager selection is measured using either our **Active and/or Passive strategies methodologies**, depending on the underlying fund options utilized within the Target Date Fund strategy.

Risk-based strategies follow the same evaluation criteria and are evaluated on both their asset allocation and security selection.

Weightings	Target Date Fund Strategies	Maximum Points
Asset Allocation Score (Average) 50%	The individual funds in this Score average require five years of time history to be included. See Asset Allocation strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average.	5
	The Funds included in this average are from the Conservative, Moderate Conservative, Moderate, Moderate Aggressive and Aggressive categories, where Funds (also referred to as “vintages”) are individually Scored according to their standard deviation or risk bucket.	
Selection Score (Average) 50%	Active strategies: The individual active funds in this Score average require five years of time history to be Scored. See Active strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average.	5
	Passive strategies: The individual passive funds in this Score average require three years of time history to be Scored. See Passive strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average.	
	Total	10

Scorecard System Methodology™

Asset Allocation Strategies

Asset allocation strategies are investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are typically structured in either a risk-based format (the strategies are managed to a level of risk, e.g., conservative or aggressive) or, in an age-based format (these strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached). For this type of investment strategy, the **Scorecard System** is focused on how well these managers can add value, with asset allocation being the primary driver of investment returns and the resulting Score. *Multisector Bond (MSB) asset class* follows the same evaluation criteria with some slightly different tolerance levels where noted. These managers are also evaluated on both their asset allocation and security selection.

Weightings	Asset Allocation Strategies	Maximum Points
Style Factors 30%	Risk Level: The fund's standard deviation is measured against the category it is being analyzed in. The fund passes if it falls within the range for that category.	1
	Style Diversity: Fund passes if it reflects appropriate style diversity (returns-based) among the four major asset classes (Cash, Fixed Income, U.S. & International Equity) for the given category. <i>MSB</i> funds pass if reflect some level of diversity among fixed income asset classes (Cash, U.S. Fixed Income, Non-U.S. Fixed Income and High Yield/Emerging Markets).	1
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 90 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	1
Risk/Return Factors 30%	Risk/Return: Fund passes if its risk is less than the benchmark or its return is greater than the benchmark. Favorable risk/return characteristics are desired.	1
	Up/Down Capture Analysis: Measures the behavior of a fund in up and down markets. Fund passes with an up capture greater than its down capture. This analysis measures the relative value by the manager in up and down markets.	1
	Information Ratio: Measures a fund's relative risk and return. Fund passes if ratio is greater than 0. This statistic measures the value added above the benchmark, adjusted for risk.	1
Peer Group Rankings 20%	Returns Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile.	1
	Sharpe Ratio Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile. This ranking ranks risk-adjusted excess return.	1
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to manager tenure, fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	2
Total		10

Scorecard System Methodology™

Active Strategies

Active strategies are investment strategies where the fund manager is trying to add value and outperform the market averages (for that style of investing). Typically, these investment strategies have higher associated fees due to the active involvement in the portfolio management process by the fund manager(s). For this type of investment strategy, the **Scorecard System** is trying to identify those managers who can add value on a consistent basis within their own style of investing.

Weightings	Active Strategies	Maximum Points
Style Factors 30%	Style Analysis: Returns-based analysis to determine the style characteristics of a fund over a period of time. Fund passes if it reflects the appropriate style characteristics. Style analysis helps ensure proper diversification in the Plan.	1
	Style Drift: Returns-based analysis to determine the behavior of the fund/manager over multiple (rolling) time periods. Fund passes if the fund exhibits a consistent style pattern. Style consistency is desired so that funds can be effectively monitored within their designated asset class.	1
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 80 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	1
Risk/Return Factors 30%	Risk/Return: Fund passes if its risk is less than the benchmark or its return is greater than the benchmark. Favorable risk/return characteristics are desired.	1
	Up/Down Capture Analysis: Measures the behavior of a fund in up and down markets. Fund passes with an up capture greater than its down capture. This analysis measures the relative value by the manager in up and down markets.	1
	Information Ratio: Measures a fund's relative risk and return. Fund passes if ratio is greater than 0. This statistic measures the value added above the benchmark, adjusted for risk.	1
Peer Group Rankings 20%	Returns Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile.	1
	Information Ratio Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile. This ranking ranks risk-adjusted excess return.	1
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to manager tenure, fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	2
	Total	10

Scorecard System Methodology™

Passive Strategies

Passive strategies are investment strategies where the fund manager is trying to track or replicate some area of the market. These types of strategies may be broad-based in nature (e.g., the fund manager is trying to track/replicate the entire U.S. equity market like the S&P 500) or may be more specific to a particular area of the market (e.g., the fund manager may be trying to track/replicate the technology sector). These investment strategies typically have lower fees than active investment strategies due to their passive nature of investing and are commonly referred to as index funds. For this type of investment strategy, the **Scorecard System** is focused on how well these managers track and/or replicate a particular area of the market with an emphasis on how they compare against their peers.

Weightings	Passive Strategies	Maximum Points
Style & Tracking Factors 40%	Style Analysis: Returns-based analysis to determine the style characteristics of a fund over a period of time. Fund passes if it reflects the appropriate style characteristics. Style analysis helps ensure proper diversification in the Plan.	1
	Style Drift: Returns-based analysis to determine the behavior of the fund/manager over multiple (rolling) time periods. Fund passes if the fund exhibits a consistent style pattern. Style consistency is desired so that funds can be effectively monitored within their designated asset class.	1
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 95 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	1
	Tracking Error: Measures the percentage of a fund's excess return volatility relative to the benchmark. Fund passes with a tracking error less than 4. This statistic measures how well the fund tracks the benchmark.	1
Peer Group Rankings 40%	Tracking Error Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
	Expense Ratio Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
	Returns Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
	Sharpe Ratio Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	2
	Total	10

Manager Research Methodology

Beyond the Scorecard

The **Scorecard System**™ uses an institutional approach which is comprehensive, independent, and utilizes a process and methodology that strives to create successful outcomes for plan sponsors and participants. The **Scorecard** helps direct the additional research the Investment team conducts with fund managers throughout the year. Three of the primary factors that go into the fund manager research are people, process and philosophy.

PEOPLE

Key Factors:

- Fund manager and team experience
- Deep institutional expertise
- Organizational structure
- Ability to drive the process and performance

PROCESS

Key Factors:

- Clearly defined
- Consistent application
- Sound and established
- Clearly communicated
- Successfully executed process

PHILOSOPHY

Key Factors:

- Research and ideas must be coherent and persuasive
- Strong rationale
- Logical and compelling
- Focus on identifying skillful managers

Scorecard System Disclosures

Investment objectives and strategies vary among fund, and may not be similar for funds included in the same asset class.

All definitions are typical category representations. The specific share classes or accounts identified above may not be available or chosen by the Plan. Share class and account availability is unique to the client's specific circumstances. There may be multiple share classes or accounts available to the client from which to choose. All recommendations are subject to vendor/provider approval before implementation into the Plan. The performance data quoted may not reflect the deduction of additional fees, if applicable. If reflected, additional fees would reduce the performance quoted.

Performance data is subject to change without prior notice.

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

The information used in the analysis has been taken from sources deemed to be reliable, including, third-party providers such as *Markov Processes International*, *Morningstar*, firms who manage the investments, and/or the retirement plan providers who offer the funds.

Every reasonable effort has been made to ensure completeness and accuracy; however, the final accuracy of the numbers and information is the responsibility of the investment manager(s) of each fund and/or the retirement plan providers offering these funds. Discrepancies between the figures reported in this analysis, and those reported by the actual investment managers and/or retirement plan providers, may be caused by a variety of factors, including: Inaccurate reporting by the manager/provider; Changes in reporting by the manager/provider from the time this report was prepared to a subsequent retro-active audit and corrected reporting; Differences in fees and share-classes impacting net investment return; and, Scriveners error by your advisor in preparing this report.

The enclosed Investment Due Diligence report, including the **Scorecard System**, is intended for plan sponsor and/or institutional use only. The materials are not intended for participant use.

The purpose of this report is to assist fiduciaries in selecting and monitoring investment options. A fund's score is meant to be used by the Plan sponsor and/or fiduciaries as a tool for selecting the most appropriate fund.

Fund scores will change as the performance of the funds change and as certain factors measured in the qualitative category change (e.g., manager tenure). Fund scores are not expected to change dramatically from each measured period, however, there is no guarantee this will be the case. Scores will change depending on the changes in the underlying pre-specified Scorecard™ factors.

Neither past performance nor statistics calculated using past performance are guarantees of a fund's future performance. Likewise, a fund's score using the **Scorecard System™** does not guarantee the future performance or style consistency of a fund.

This report was prepared with the belief that this information is relevant to the Plan sponsor as the Plan sponsor makes investment selections.

Fund selection is at the discretion of the investment fiduciaries, which are either the Plan sponsor or the Committee appointed to perform that function.

Cash Equivalents (e.g., money market fund) and some specialty funds are not scored by the **Scorecard System**.

The enclosed Investment Due Diligence report and Scorecard™ is not an offer to sell mutual funds. An offer to sell may be made only after the client has received and read the appropriate prospectus.

For the most current month-end performance, please contact your advisor.

The Strategy Review notes section is for informational purposes only. The views expressed here are those of your advisor and do not constitute an offer to sell an investment. An offer to sell may be made only after the client has received and read the appropriate prospectus.

Carefully consider the investment objectives, risk factors and charges and expenses of the investment company before investing. This and other information can be found in the fund's prospectus, which may be obtained by contacting your Investment Advisor/Consultant or Vendor/Provider. Read the prospectus carefully before investing.

For a copy of the most recent prospectus, please contact your Investment Advisor/Consultant or Vendor/Provider.

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Scorecard™ - 457(b) Plan

Total Plan Assets: \$666,462,413.00 as of 9/30/2021

Target Date Series

Asset Allocation	Assets	Asset Class	Risk Index	Allocation Score (Series Funds)		Selection Score (Underlying Funds)		Blended Score			
				# of Funds	Avg Score	# of Funds	Avg Score	Q3 2021	Q2 2021	Q1 2021	Q4 2020
Vanguard Instl Trgt Retire Target Date Series Instl	\$172,487,171.00	AGG	85	12	7.9	5	8.2	8	8	9	8

Allocation (Series Funds)

Asset Allocation	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group			Qual	Score Components		Score
				Risk Level	Style Diversity	R ²	Risk/Return	Up/Down	Info Ratio	Return Rank	SR Rank	2pt Max		Allocation	Selection	
Vanguard Instl Trgt Retire Inc Instl	\$8,359,997.00	CON	VITRX	1	1	1	0	1	0	1	1	2	8	8.2	8	
				5.1	30.8/69.2	99.0	5.1/6.3	99.2/98.3	-0.01	10.0	16.0	CON				
Vanguard Instl Trgt Retire 2015 Instl	\$11,551,438.00	MC	VITVX	1	1	1	1	1	1	1	1	2	10	8.2	9	
				6.0	39.6/60.4	99.0	6.0/7.2	98.6/95.9	0.09	21.0	7.0	MC				
Vanguard Instl Trgt Retire 2020 Instl	\$463,944.00	MOD	VITWX	1	1	1	1	1	0	1	1	2	9	8.2	9	
				7.9	52.3/47.7	99.5	7.9/8.6	98.6/97.9	-0.1	34.0	13.0	MOD				
Vanguard Instl Trgt Retire 2025 Instl	\$44,581,443.00	MOD	VRIVX	1	1	1	1	0	0	1	1	2	8	8.2	8	
				9.3	61.4/38.6	99.6	9.3/9.7	98.9/99.3	-0.22	20.0	21.0	MOD				
Vanguard Instl Trgt Retire 2030 Instl	\$1,036,830.00	MOD	VTTWX	1	1	1	1	0	0	1	1	2	8	8.2	8	
				10.4	69.1/30.9	99.7	10.4/10.5	98.9/99.4	-0.25	15.0	30.0	MOD				

Scorecard™ - 457(b) Plan

continued

Allocation (Series Funds)

Asset Allocation	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score Components		Score
				Risk Level	Style Diversity	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	SR Rank	2pt Max	Allocation	Selection	Q3 2021
Vanguard Instl Trgt Retire 2035 Instl	\$41,006,968.00	MA	VITFX	1	1	1	1	0	0	1	1	2	8	8.2	8
				11.5	76.5/23.5	99.8	11.5/11.3	99.3/99.8	-0.2	30.0	25.0				MA
Vanguard Instl Trgt Retire 2040 Instl	\$690,832.00	MA	VIRSX	1	1	1	1	0	0	1	1	2	8	8.2	8
				12.6	83.9/16.1	99.8	12.6/12.1	99.5/99.9	-0.18	27.0	35.0				MA
Vanguard Instl Trgt Retire 2045 Instl	\$36,923,482.00	AGG	VITLX	1	1	1	0	0	0	1	1	2	7	8.2	8
				13.5	89.2/10.8	99.8	13.5/12.7	99.9/100.9	-0.22	17.0	15.0				AGG
Vanguard Instl Trgt Retire 2050 Instl	\$966,120.00	AGG	VTRLX	1	1	1	0	0	0	1	1	2	7	8.2	8
				13.5	89.4/10.6	99.8	13.5/12.7	100.1/100.7	-0.13	17.0	15.0				AGG
Vanguard Instl Trgt Retire 2055 Instl	\$26,153,552.00	AGG	VIVLX	1	1	1	0	0	0	1	1	2	7	8.2	8
				13.5	89.3/10.7	99.8	13.5/12.7	100.2/100.8	-0.11	17.0	14.0				AGG
Vanguard Instl Trgt Retire 2060 Instl	\$712,297.00	AGG	VILVX	1	1	1	0	0	0	1	1	2	7	8.2	8
				13.5	89.5/10.5	99.8	13.5/12.7	100.1/100.8	-0.14	17.0	15.0				AGG
Vanguard Instl Trgt Retire 2065 Instl	\$40,268.00	AGG	VSXFX										-	8.2	-

Scorecard™ - 457(b) Plan

Core Lineup

Active	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
				Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
American Funds American Mutual R6	\$21,082,082.00	LCV	RMFGX	1	1	1	1	1	1	1	1	2	10	10	10	10
				-42.9/ 73.8	3.8	93.6	12.0/ 11.7	81.7/ 69.6	0.14	11.0	20.0		LCV	LCV	LCV	LCV
Parnassus Core Equity Institutional	\$8,645,822.00	LCB	PRILX	1	1	1	1	1	0	1	1	2	9	10	9	9
				-12.9/ 85.1	13.0	94.3	13.7/ 17.0	91.3/ 85.0	-0.03	2.0	5.0		LCB	LCB	LCB	LCB
American Funds Fundamental Invs R6	\$52,593,388.00	LCB	RFNGX	1	1	1	1	0	0	0	0	2	6	8	8	8
				-16.2/ 81.6	6.4	96.6	14.9/ 15.0	91.2/ 97.0	-0.72	51.0	55.0		LCB	LCB	LCB	LCB
American Funds Growth Fund of Amer R6	\$53,621,717.00	LCG	RGAGX	1	1	1	1	0	0	0	0	2	6	6	7	6
				72.2/ 61.6	13.3	94.0	15.8/ 20.1	87.6/ 90.1	-0.67	71.0	67.0		LCG	LCG	LCG	LCG
American Century Mid Cap Value R6	\$5,929,643.00	MCV	AMDVX	0	1	1	1	0	0	1	1	2	7	8	9	9
				-93.4/ 33.7	10.1	96.2	16.9/ 9.8	91.4/ 92.8	-0.21	43.0	43.0		MCV	MCV	MCV	MCV
MassMutual Mid Cap Growth I	\$20,240,883.00	MCG	MEFZX	1	1	1	1	0	0	0	0	2	6	6	6	8
				40.8/ 6.4	11.6	96.1	17.0/ 17.5	90.7/ 92.0	-0.51	71.0	75.0		MCG	MCG	MCG	MCG
Small Cap Value I1 (BMO Disciplined SCV)	\$1,248,893.00	SCV	97181N296	1	0	1	0	0	0	1	0	2	5	5	7	8
				-95.3/ -80.0	21.8	97.2	22.6/ 10.2	101.5/ 104.5	-0.22	50.0	55.0		SCV	SCV	SCV	SCV
Small Cap Growth I1 (Victory RS SCG R6)	\$9,700,604.00	SCG	97181N361	1	1	1	1	1	1	1	1	2	10	10	10	10
				100.0/ -78.5	10.4	91.7	21.3/ 17.2	102.5/ 95.9	0.3	38.0	39.0		SCG	SCG	SCG	SCG
American Funds Europacific Growth R6	\$11,879,044.00	ILCG	RERGX	1	1	1	1	0	1	1	1	2	9	10	10	10
				45.5/ 3.9	9.9	86.6	15.6/ 12.2	110.7/ 114.7	0.05	28.0	28.0		ILCG	ILCG	ILCG	ILCG

Scorecard™ - 457(b) Plan

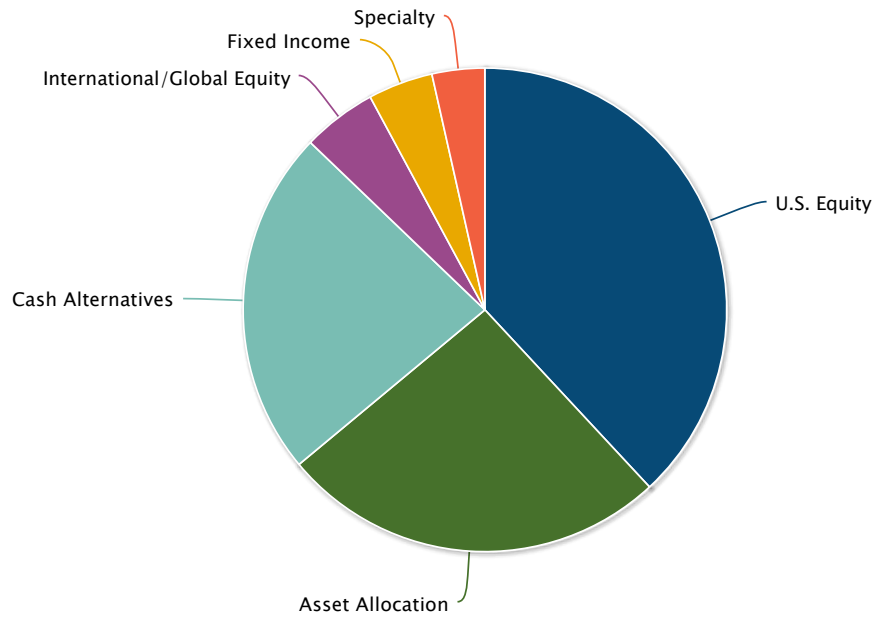
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Active	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score				
				Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
Invesco Developing Markets R6	\$4,030,102.00	EME	ODVIX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				28.7/ -51.3	18.0	94.4	16.2/ 10.0	95.2/ 90.9	0.18	31.0	30.0		EME	EME	EME	EME	
American Funds Capital World Gr&Inc R6	\$12,843,287.00	GE	RWIGX	1	1	1	1	0	0	1	0	2	7	7	9	9	
				4.1/ 45.6	21.9	98.2	13.9/ 12.1	91.6/ 93.3	-0.52	50.0	52.0		GE	GE	GE	GE	
PIMCO Total Return Instl	\$14,124,693.00	CFI	PTTRX	1	1	1	1	1	1	1	1	2	10	10	10	10	
				15.6/ 60.1	12.4	90.4	3.4/ 3.7	106.6/ 90.4	0.67	28.0	26.0		CFI	CFI	CFI	CFI	
PIMCO Long-Term Real Return Instl	\$4,737,251.00	UGT	PRAIX	0	0	1	1	0	1	1	1	1	1	6	6	6	7
				10.7/ 83.6	54.5	82.5	9.7/ 7.5	211.5/ 241.7	0.49	1.0	1.0	T	UGT	UGT	UGT	UGT	
MassMutual High Yield I	\$1,067,981.00	HY	MPHZX	1	1	1	1	0	0	1	1	2	8	8	8	8	
				97.1/ -97.1	1.6	97.0	7.4/ 6.4	100.9/ 102.1	-0.01	27.0	29.0		HY	HY	HY	HY	
SAGIC Core Bond	\$147,642,398.00	SV												-	-	-	-
																-	-
Invesco Real Estate R5	\$3,542,381.00	REI	IARIX	1	1	1	1	1	1	1	1	2	10	10	10	10	
				-80.3/ 84.7	8.6	93.8	15.5/ 7.0	87.6/ 80.0	0.28	45.0	36.0		REI	REI	REI	REI	
Hartford Healthcare HLS IA	\$8,295,934.00	HC	HIAHX	1	1	1	1	0	1	1	1	2	9	10	8	7	
				-98.4/ -53.5	6.9	86.5	16.1/ 14.6	103.1/ 104.3	0.02	48.0	47.0		HC	HC	HC	HC	
Schwab PCRA	\$5,216,548.00	SPC	schwab.massmutual											-	-	-	-
																-	-

Scorecard™ - 457(b) Plan

Passive	Assets	Asset Class	Ticker/ ID	Style				Peer Group				Qual 2pt Max	Score				
				Style	Style Drift	R ²	Tracking Error	TE Rank	Expense Rank	Return Rank	SR Rank		Q3 2021	Q2 2021	Q1 2021	Q4 2020	
Vanguard Institutional Index I	\$32,562,428.00	LCB-P	VINIX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				5.0/ 96.7	2.5	99.8	1.0	38.0	12.0	22.0	19.0		LCB- P	LCB- P	LCB- P	LCB- P	
Vanguard Total Stock Mkt Idx Inv	\$23,778,430.00	LCB-P	VTSMX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				5.7/ 84.8	1.5	99.9	0.8	12.0	23.0	28.0	53.0		LCB- P	LCB- P	LCB- P	LCB- P	
Vanguard Mid Cap Index Institutional	\$9,851,215.00	MCB-P	VMCIX	1	1	1	1	1	1	1	1	1	2	10	9	9	9
				-13.2/ 8.0	4.9	99.7	1.3	24.0	6.0	2.0	1.0		MCB- P	MCB- P	MCB- P	MCB- P	
Vanguard Small Cap Index I	\$14,558,930.00	SCB-P	VSCIX	1	0	1	1	0	1	1	1	1	2	8	9	8	8
				-7.6/ -51.4	8.8	97.9	3.8	92.0	6.0	2.0	2.0		SCB- P	SCB- P	SCB- P	SCB- P	
Vanguard Developed Markets Index Inv	\$4,422,878.00	ILCB-P	VDVIX	1	1	1	1	0	1	1	1	1	2	9	9	9	9
				-14.8/ 16.1	16.4	98.4	2.4	87.0	24.0	12.0	20.0		ILCB- P	ILCB- P	ILCB- P	ILCB- P	
Vanguard Total Bond Market Index I	\$8,935,385.00	CFI-P	VBTIX	1	0	1	1	1	1	1	1	1	2	9	9	10	10
				15.7/ 64.5	12.6	99.3	0.3	64.0	11.0	12.0	19.0		CFI- P	CFI- P	CFI- P	CFI- P	
Bank of the West Savings	\$6,943,417.00	SV-P	NA											-	-	-	-
																-	-
Vanguard Utilities Index Adm	\$6,479,908.00	UTI-P	VUIAX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				97.6/ 0.3	1.0	99.9	0.5	0.0	3.0	15.0	15.0		UTI- P	UTI- P	UTI- P	UTI- P	

Plan Allocation by Investment Type - 457(b) Plan



Investment Type	Assets	Percentage
U.S. Equity	\$253,814,035	38.1%
Asset Allocation	\$172,487,171	25.9%
Cash Alternatives	\$154,585,815	23.2%
International/Global Equity	\$33,175,311	5.0%
Fixed Income	\$28,865,310	4.3%
Specialty	\$23,534,771	3.5%
Total	\$666,462,413	100%

as of 9/30/2021

Plan Allocation by Investment Type - 457(b) Plan

Investment Name	Asset Class	Amount	Percentage	Score
U.S. Equity		\$253,814,035		
American Funds American Mutual R6	LCV	\$21,082,082	3.2%	10
Parnassus Core Equity Institutional	LCB	\$8,645,822	1.3%	9
American Funds Fundamental Invs R6	LCB	\$52,593,388	7.9%	6
Vanguard Institutional Index I	LCB-P	\$32,562,428	4.9%	10
Vanguard Total Stock Mkt Idx Inv	LCB-P	\$23,778,430	3.6%	10
American Funds Growth Fund of Amer R6	LCG	\$53,621,717	8.0%	6
American Century Mid Cap Value R6	MCV	\$5,929,643	0.9%	7
Vanguard Mid Cap Index Institutional	MCB-P	\$9,851,215	1.5%	10
MassMutual Mid Cap Growth I	MCG	\$20,240,883	3.0%	6
Small Cap Value I1 (BMO Disciplined SCV)	SCV	\$1,248,893	0.2%	5
Vanguard Small Cap Index I	SCB-P	\$14,558,930	2.2%	8
Small Cap Growth I1 (Victory RS SCG R6)	SCG	\$9,700,604	1.5%	10
Asset Allocation		\$172,487,171		
Vanguard Instl Trgt Retire Inc Instl	CON	\$8,359,997	1.3%	8
Vanguard Instl Trgt Retire 2015 Instl	MC	\$11,551,438	1.7%	9
Vanguard Instl Trgt Retire 2020 Instl	MOD	\$463,944	0.1%	9
Vanguard Instl Trgt Retire 2025 Instl	MOD	\$44,581,443	6.7%	8
Vanguard Instl Trgt Retire 2030 Instl	MOD	\$1,036,830	0.2%	8
Vanguard Instl Trgt Retire 2040 Instl	MA	\$690,832	0.1%	8
Vanguard Instl Trgt Retire 2035 Instl	MA	\$41,006,968	6.2%	8
Vanguard Instl Trgt Retire 2055 Instl	AGG	\$26,153,552	3.9%	8
Vanguard Instl Trgt Retire 2050 Instl	AGG	\$966,120	0.1%	8
Vanguard Instl Trgt Retire 2060 Instl	AGG	\$712,297	0.1%	8

Plan Allocation by Investment Type - 457(b) Plan

Investment Name	Asset Class	Amount	Percentage	Score
Vanguard Instl Trgt Retire 2045 Instl	AGG	\$36,923,482	5.5%	8
Vanguard Instl Trgt Retire 2065 Instl	AGG	\$40,268	0.0%	
Cash Alternatives		\$154,585,815		
SAGIC Core Bond	SV	\$147,642,398	22.2%	
Bank of the West Savings	SV-P	\$6,943,417	1.0%	
International/Global Equity		\$33,175,311		
Vanguard Developed Markets Index Inv	ILCB-P	\$4,422,878	0.7%	9
American Funds Europacific Growth R6	ILCG	\$11,879,044	1.8%	9
Invesco Developing Markets R6	EME	\$4,030,102	0.6%	10
American Funds Capital World Gr&Inc R6	GE	\$12,843,287	1.9%	7
Fixed Income		\$28,865,310		
PIMCO Total Return Instl	CFI	\$14,124,693	2.1%	10
Vanguard Total Bond Market Index I	CFI-P	\$8,935,385	1.3%	9
PIMCO Long-Term Real Return Instl	UGT	\$4,737,251	0.7%	6
MassMutual High Yield I	HY	\$1,067,981	0.2%	8
Specialty		\$23,534,771		
Invesco Real Estate R5	REI	\$3,542,381	0.5%	10
Hartford Healthcare HLS IA	HC	\$8,295,934	1.2%	9
Vanguard Utilities Index Adm	UTI-P	\$6,479,908	1.0%	10
Schwab PCRA	SPC	\$5,216,548	0.8%	
Total		\$666,462,413	100.0%	

Scorecard™ - 401(a) Plan

Total Plan Assets: \$8,638,450.00 as of 9/30/2021

Target Date Series

Asset Allocation	Assets	Asset Class	Risk Index	Allocation Score (Series Funds)		Selection Score (Underlying Funds)		Blended Score			
				# of Funds	Avg Score	# of Funds	Avg Score	Q3 2021	Q2 2021	Q1 2021	Q4 2020
Vanguard Target Retirement Series Inv	\$6,753,206.00	AGG	85	12	7.8	5	7.8	8	8	8	8

Allocation (Series Funds)

Asset Allocation	Assets	Asset Class	Ticker/ID	Style			Risk/Return			Peer Group			Qual	Score Components		Score
				Risk Level	Style Diversity	R ²	Risk/Return	Up/Down	Info Ratio	Return Rank	SR Rank	2pt Max		Allocation	Selection	
Vanguard Target Retirement Income Inv (Default)	\$12,841.00	CON	VTINX	1	1	1	0	1	0	1	1	2	8	7.8	8	
				5.1	30.5/69.5	99.0	5.1/6.2	98.4/98.3	-0.18	13.0	19.0				CON	
Vanguard Target Retirement 2015 Inv (Default)	\$287,203.00	MC	VTXVX	1	1	1	1	1	0	1	1	2	9	7.8	8	
				6.0	43.2/56.8	98.7	6.0/7.1	91.5/88.6	-0.42	23.0	9.0				MC	
Vanguard Target Retirement 2020 Inv	\$110,324.00	MOD	VTWNX	1	1	1	1	1	0	1	1	2	9	7.8	8	
				7.9	54.9/45.1	99.4	7.9/8.6	94.1/93.3	-0.54	35.0	15.0				MOD	
Vanguard Target Retirement 2025 Inv (Default)	\$816,034.00	MOD	VTTVX	1	1	1	1	0	0	1	1	2	8	7.8	8	
				9.3	63.6/36.4	99.6	9.3/9.6	95.0/95.7	-0.71	21.0	23.0				MOD	
Vanguard Target Retirement 2030 Inv	\$150,049.00	MOD	VTHR3	1	1	1	1	0	0	1	1	2	8	7.8	8	
				10.4	71.1/28.9	99.7	10.4/10.4	95.5/96.3	-0.68	15.0	31.0				MOD	

Scorecard™ - 401(a) Plan

continued

Allocation (Series Funds)

Asset Allocation	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score Components		Score
				Risk Level	Style Diversity	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	SR Rank	2pt Max	Allocation	Selection	Q3 2021
Vanguard Target Retirement 2035 Inv (Default)	\$959,570.00	MA	VTTHX	1	1	1	1	0	0	1	1	2	8	7.8	8
				11.4	78.5/21.5	99.7	11.4/11.2	95.8/96.9	-0.69	30.0	26.0				MA
Vanguard Target Retirement 2040 Inv	\$71,658.00	MA	VFORX	1	1	1	1	0	0	1	1	2	8	7.8	8
				12.5	85.0/15.0	99.7	12.5/12.0	97.0/98.3	-0.65	28.0	35.0				MA
Vanguard Target Retirement 2045 Inv (Default)	\$1,753,500.00	AGG	VTIVX	1	1	1	0	0	0	1	1	2	7	7.8	7
				13.5	89.1/10.9	99.8	13.5/12.6	98.8/100.9	-0.62	19.0	17.0				AGG
Vanguard Target Retirement 2050 Inv	\$112,740.00	AGG	VFIFX	1	1	1	0	0	0	1	1	2	7	7.8	7
				13.5	89.2/10.8	99.8	13.5/12.7	99.0/101.0	-0.56	19.0	16.0				AGG
Vanguard Target Retirement 2055 Inv (Default)	\$2,426,511.00	AGG	VFFVX	1	1	1	0	0	0	1	1	2	7	7.8	7
				13.5	89.1/10.9	99.8	13.5/12.7	99.0/101.0	-0.57	19.0	17.0				AGG
Vanguard Target Retirement 2060 Inv	\$47,860.00	AGG	VTTSX	1	1	1	0	0	0	1	1	2	7	7.8	7
				13.5	89.1/10.9	99.8	13.5/12.6	99.2/101.1	-0.53	19.0	17.0				AGG
Vanguard Target Retirement 2065 Inv	\$4,916.00	AGG	VLXVX										-	7.8	-

Scorecard™ - 401(a) Plan

Core Lineup

Active	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
				Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
American Funds American Mutual R6	\$30,912.00	LCV	RMFGX	1	1	1	1	1	1	1	1	2	10	10	10	10
				-42.9/ 73.8	3.8	93.6	12.0/ 11.7	81.7/ 69.6	0.14	11.0	20.0		LCV	LCV	LCV	LCV
Parnassus Core Equity Institutional	\$57,347.00	LCB	PRILX	1	1	1	1	1	0	1	1	2	9	10	9	9
				-12.9/ 85.1	13.0	94.3	13.7/ 17.0	91.3/ 85.0	-0.03	2.0	5.0		LCB	LCB	LCB	LCB
American Funds Fundamental Invs R6	\$25,651.00	LCB	RFNGX	1	1	1	1	0	0	0	0	2	6	8	8	8
				-16.2/ 81.6	6.4	96.6	14.9/ 15.0	91.2/ 97.0	-0.72	51.0	55.0		LCB	LCB	LCB	LCB
American Funds Growth Fund of Amer R6	\$92,507.00	LCG	RGAGX	1	1	1	1	0	0	0	0	2	6	6	7	6
				72.2/ 61.6	13.3	94.0	15.8/ 20.1	87.6/ 90.1	-0.67	71.0	67.0		LCG	LCG	LCG	LCG
American Century Mid Cap Value R6	\$7,325.00	MCV	AMDVX	0	1	1	1	0	0	1	1	2	7	8	9	9
				-93.4/ 33.7	10.1	96.2	16.9/ 9.8	91.4/ 92.8	-0.21	43.0	43.0		MCV	MCV	MCV	MCV
MassMutual Mid Cap Growth I	\$35,844.00	MCG	MEFZX	1	1	1	1	0	0	0	0	2	6	6	6	8
				40.8/ 6.4	11.6	96.1	17.0/ 17.5	90.1/ 92.0	-0.51	71.0	75.0		MCG	MCG	MCG	MCG
Small Cap Value I1 (BMO Disciplined SCV)	\$18,276.00	SCV	97181N296	1	0	1	0	0	0	1	0	2	5	5	7	8
				-95.3/ -80.0	21.8	97.2	22.6/ 10.2	101.5/ 104.5	-0.22	50.0	55.0		SCV	SCV	SCV	SCV
Small Cap Growth I1 (Victory RS SCG R6)	\$10,014.00	SCG	97181N361	1	1	1	1	1	1	1	1	2	10	10	10	10
				100.0/ -78.5	10.4	91.7	21.3/ 17.2	102.5/ 95.9	0.3	38.0	39.0		SCG	SCG	SCG	SCG
American Funds Europacific Growth R6	\$21,561.00	ILCG	RERGX	1	1	1	1	0	1	1	1	2	9	10	10	10
				45.5/ 3.9	9.9	86.6	15.6/ 12.2	110.7/ 114.7	0.05	28.0	28.0		ILCG	ILCG	ILCG	ILCG

Scorecard™ - 401(a) Plan

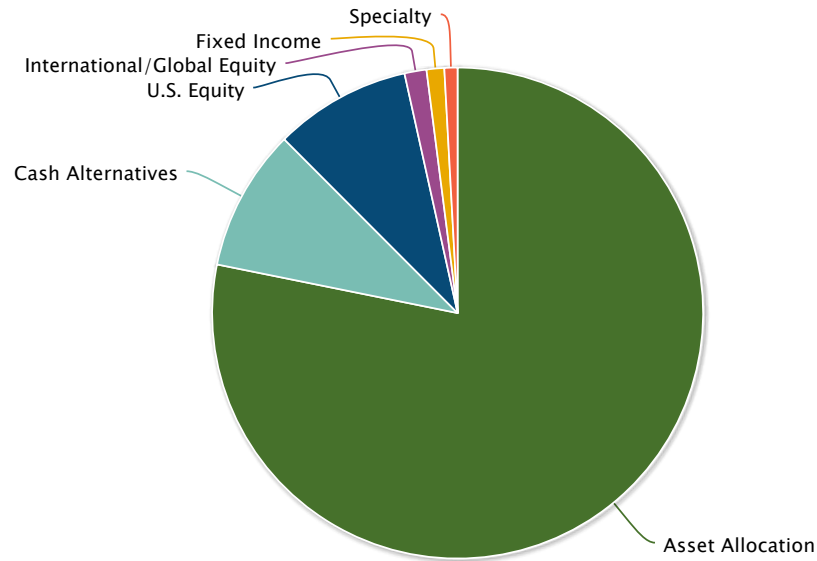
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Active	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score				
				Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
Invesco Developing Markets R6	\$34,350.00	EME	ODVIX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				28.7/ -51.3	18.0	94.4	16.2/ 10.0	95.2/ 90.9	0.18	31.0	30.0		EME	EME	EME	EME	
American Funds Capital World Gr&Inc R6	\$16,833.00	GE	RWIGX	1	1	1	1	0	0	1	0	2	7	7	9	9	
				4.1/ 45.6	21.9	98.2	13.9/ 12.1	91.6/ 93.3	-0.52	50.0	52.0		GE	GE	GE	GE	
PIMCO Total Return Instl	\$20,837.00	CFI	PTRX	1	1	1	1	1	1	1	1	2	10	10	10	10	
				15.6/ 60.1	12.4	90.4	3.4/ 3.7	106.6/ 90.4	0.67	28.0	26.0		CFI	CFI	CFI	CFI	
PIMCO Long-Term Real Return Instl	\$32,160.00	UGT	PRAIX	0	0	1	1	0	1	1	1	1	1	6	6	6	7
				10.7/ 83.6	54.5	82.5	9.7/ 7.5	211.5/ 241.7	0.49	1.0	1.0	T	UGT	UGT	UGT	UGT	
MassMutual High Yield I	\$7,821.00	HY	MPHZX	1	1	1	1	0	0	1	1	2	8	8	8	8	
				97.1/ -97.1	1.6	97.0	7.4/ 6.4	100.9/ 102.1	-0.01	27.0	29.0		HY	HY	HY	HY	
SAGIC Core Bond	\$790,976.00	SV											-	-	-	-	
															-	-	-
Invesco Real Estate R5	\$54,851.00	REI	IARIX	1	1	1	1	1	1	1	1	2	10	10	10	10	
				-80.3/ 84.7	8.6	93.8	15.5/ 7.0	87.6/ 80.0	0.28	45.0	36.0		REI	REI	REI	REI	
Hartford Healthcare HLS IA	\$17,401.00	HC	HIAHX	1	1	1	1	0	1	1	1	2	9	10	8	7	
				-98.4/ -53.5	6.9	86.5	16.1/ 14.6	103.1/ 104.3	0.02	48.0	47.0		HC	HC	HC	HC	

Scorecard™ - 401(a) Plan

Passive	Assets	Asset Class	Ticker/ ID	Style				Peer Group				Qual	Score				
				Style	Style Drift	R ²	Tracking Error	TE Rank	Expense Rank	Return Rank	SR Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
Vanguard Institutional Index I	\$176,226.00	LCB-P	VINIX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				5.0/ 96.7	2.5	99.8	1.0	38.0	12.0	22.0	19.0		LCB-P	LCB-P	LCB-P	LCB-P	
Vanguard Total Stock Mkt Idx Inv	\$146,199.00	LCB-P	VTSMX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				5.7/ 84.8	1.5	99.9	0.8	12.0	23.0	28.0	53.0		LCB-P	LCB-P	LCB-P	LCB-P	
Vanguard Mid Cap Index Institutional	\$70,503.00	MCB-P	VMCIX	1	1	1	1	1	1	1	1	1	2	10	9	9	9
				-13.2/ 8.0	4.9	99.7	1.3	24.0	6.0	2.0	1.0		MCB-P	MCB-P	MCB-P	MCB-P	
Vanguard Small Cap Index I	\$107,074.00	SCB-P	VSCIX	1	0	1	1	0	1	1	1	1	2	8	9	8	8
				-7.6/ -51.4	8.8	97.9	3.8	92.0	6.0	2.0	2.0		SCB-P	SCB-P	SCB-P	SCB-P	
Vanguard Developed Markets Index Inv	\$53,235.00	ILCB-P	VDVIX	1	1	1	1	0	1	1	1	1	2	9	9	9	9
				-14.8/ 16.1	16.4	98.4	2.4	87.0	24.0	12.0	20.0		ILCB-P	ILCB-P	ILCB-P	ILCB-P	
Vanguard Total Bond Market Index I	\$39,032.00	CFI-P	VBTIX	1	0	1	1	1	1	1	1	1	2	9	9	10	10
				15.7/ 64.5	12.6	99.3	0.3	64.0	11.0	12.0	19.0		CFI-P	CFI-P	CFI-P	CFI-P	
Bank of the West Savings	\$15,800.00	SV-P	NA											-	-	-	-
																	-
Vanguard Utilities Index Adm	\$2,509.00	UTI-P	VUIAX	1	1	1	1	1	1	1	1	1	2	10	10	10	10
				97.6/ 0.3	1.0	99.9	0.5	0.0	3.0	15.0	15.0		UTI-P	UTI-P	UTI-P	UTI-P	

Plan Allocation by Investment Type - 401(a) Plan



Investment Type	Assets	Percentage
Asset Allocation	\$6,753,206	78.2%
Cash Alternatives	\$806,776	9.3%
U.S. Equity	\$777,878	9.0%
International/Global Equity	\$125,979	1.5%
Fixed Income	\$99,850	1.2%
Specialty	\$74,761	0.9%
Total	\$8,638,450	100%

as of 9/30/2021

Plan Allocation by Investment Type - 401(a) Plan

Investment Name	Asset Class	Amount	Percentage	Score
Asset Allocation		\$6,753,206		
Vanguard Target Retirement Income Inv	CON	\$12,841	0.1%	8
Vanguard Target Retirement 2015 Inv	MC	\$287,203	3.3%	8
Vanguard Target Retirement 2020 Inv	MOD	\$110,324	1.3%	8
Vanguard Target Retirement 2030 Inv	MOD	\$150,049	1.7%	8
Vanguard Target Retirement 2025 Inv	MOD	\$816,034	9.4%	8
Vanguard Target Retirement 2040 Inv	MA	\$71,658	0.8%	8
Vanguard Target Retirement 2035 Inv	MA	\$959,570	11.1%	8
Vanguard Target Retirement 2060 Inv	AGG	\$47,860	0.6%	7
Vanguard Target Retirement 2050 Inv	AGG	\$112,740	1.3%	7
Vanguard Target Retirement 2055 Inv	AGG	\$2,426,511	28.1%	7
Vanguard Target Retirement 2045 Inv	AGG	\$1,753,500	20.3%	7
Vanguard Target Retirement 2065 Inv	AGG	\$4,916	0.1%	
Cash Alternatives		\$806,776		
SAGIC Core Bond	SV	\$790,976	9.2%	
Bank of the West Savings	SV-P	\$15,800	0.2%	
U.S. Equity		\$777,878		
American Funds American Mutual R6	LCV	\$30,912	0.4%	10
Parnassus Core Equity Institutional	LCB	\$57,347	0.7%	9
American Funds Fundamental Invs R6	LCB	\$25,651	0.3%	6
Vanguard Institutional Index I	LCB-P	\$176,226	2.0%	10
Vanguard Total Stock Mkt Idx Inv	LCB-P	\$146,199	1.7%	10
American Funds Growth Fund of Amer R6	LCG	\$92,507	1.1%	6
American Century Mid Cap Value R6	MCV	\$7,325	0.1%	7

Plan Allocation by Investment Type - 401(a) Plan

Investment Name	Asset Class	Amount	Percentage	Score
Vanguard Mid Cap Index Institutional	MCB-P	\$70,503	0.8%	10
MassMutual Mid Cap Growth I	MCG	\$35,844	0.4%	6
Small Cap Value I1 (BMO Disciplined SCV)	SCV	\$18,276	0.2%	5
Vanguard Small Cap Index I	SCB-P	\$107,074	1.2%	8
Small Cap Growth I1 (Victory RS SCG R6)	SCG	\$10,014	0.1%	10
International/Global Equity		\$125,979		
Vanguard Developed Markets Index Inv	ILCB-P	\$53,235	0.6%	9
American Funds Europacific Growth R6	ILCG	\$21,561	0.2%	9
Invesco Developing Markets R6	EME	\$34,350	0.4%	10
American Funds Capital World Gr&Inc R6	GE	\$16,833	0.2%	7
Fixed Income		\$99,850		
PIMCO Total Return Instl	CFI	\$20,837	0.2%	10
Vanguard Total Bond Market Index I	CFI-P	\$39,032	0.5%	9
PIMCO Long-Term Real Return Instl	UGT	\$32,160	0.4%	6
MassMutual High Yield I	HY	\$7,821	0.1%	8
Specialty		\$74,761		
Invesco Real Estate R5	REI	\$54,851	0.6%	10
Hartford Healthcare HLS IA	HC	\$17,401	0.2%	9
Vanguard Utilities Index Adm	UTI-P	\$2,509	0.0%	10
Total		\$8,638,450	100.0%	

Scorecard™ - HRA Plan

Total Plan Assets: \$980,462.01 as of 9/30/2021

Target Date Series

Asset Allocation	Assets	Asset Class	Risk Index	Allocation Score (Series Funds)		Selection Score (Underlying Funds)		Blended Score			
				# of Funds	Avg Score	# of Funds	Avg Score	Q3 2021	Q2 2021	Q1 2021	Q4 2020
Vanguard Target Retirement Series Inv	\$735,290.16	AGG	85	12	7.8	5	7.8	8	8	8	8

Allocation (Series Funds)

Asset Allocation	Assets	Asset Class	Ticker/ID	Style			Risk/Return			Peer Group		Qual	Score Components		Score
				Risk Level	Style Diversity	R ²	Risk/Return	Up/Down	Info Ratio	Return Rank	SR Rank		2pt Max	Allocation	
Vanguard Target Retirement Income Inv	\$671,094.72	CON	VTINX	1	1	1	0	1	0	1	1	2	8	7.8	8
				5.1	30.5/69.5	99.0	5.1/6.2	98.4/98.3	-0.18	13.0	19.0				CON
Vanguard Target Retirement 2015 Inv	\$0.00	MC	VTXVX	1	1	1	1	1	0	1	1	2	9	7.8	8
				6.0	43.2/56.8	98.7	6.0/7.1	91.5/88.6	-0.42	23.0	9.0				MC
Vanguard Target Retirement 2025 Inv	\$24,418.86	MOD	VTTVX	1	1	1	1	0	0	1	1	2	8	7.8	8
				9.3	63.6/36.4	99.6	9.3/9.6	95.0/95.7	-0.71	21.0	23.0				MOD
Vanguard Target Retirement 2035 Inv	\$0.00	MA	VTTHX	1	1	1	1	0	0	1	1	2	8	7.8	8
				11.4	78.5/21.5	99.7	11.4/11.2	95.8/96.9	-0.69	30.0	26.0				MA
Vanguard Target Retirement 2045 Inv	\$35,137.53	AGG	VTIVX	1	1	1	0	0	0	1	1	2	7	7.8	7
				13.5	89.1/10.9	99.8	13.5/12.6	98.8/100.9	-0.62	19.0	17.0				AGG

Scorecard™ - HRA Plan

continued

Allocation (Series Funds)

Asset Allocation	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score Components		Score
				Risk Level	Style Diversity	R ²	Risk/Return	Up/Down	Info Ratio	Return Rank	SR Rank	2pt Max	Allocation	Selection	Q3 2021
Vanguard Target Retirement 2055 Inv	\$4,639.05	AGG	VFFVX	1	1	1	0	0	0	1	1	2	7	7.8	7
				13.5	89.1/10.9	99.8	13.5/12.7	99.0/101.0	-0.57	19.0	17.0				AGG

Core Lineup

Asset Allocation	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
				Risk Level	Style Diversity	R ²	Risk/Return	Up/Down	Info Ratio	Return Rank	SR Rank	2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
MassMutual Stable Value Group	\$140,181.80	SV											-	-	-	-
															-	-

Active	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
				Style	Style Drift	R ²	Risk/Return	Up/Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
Parnassus Core Equity Investor	\$14,815.97	LCB	PRBLX	1	1	1	1	1	0	1	1	2	9	9	9	9
				-12.8/85.2	12.9	94.3	13.7/16.8	90.7/85.4	-0.09	3.0	5.0		LCB	LCB	LCB	LCB
American Funds Fundamental Invs F3	\$20,922.28	LCB	FUNFX	1	1	1	1	0	0	0	0	2	6	8	8	8
				-16.1/81.8	6.3	96.6	14.9/15.0	91.2/97.1	-0.74	51.0	55.0		LCB	LCB	LCB	LCB
American Funds Growth Fund of Amer F3	\$1,678.64	LCG	GAFFX	1	1	1	1	0	0	0	0	2	6	6	7	6
				72.3/61.8	13.3	94.0	15.8/20.1	87.5/90.1	-0.68	71.0	67.0		LCG	LCG	LCG	LCG

Scorecard™ - HRA Plan

continued

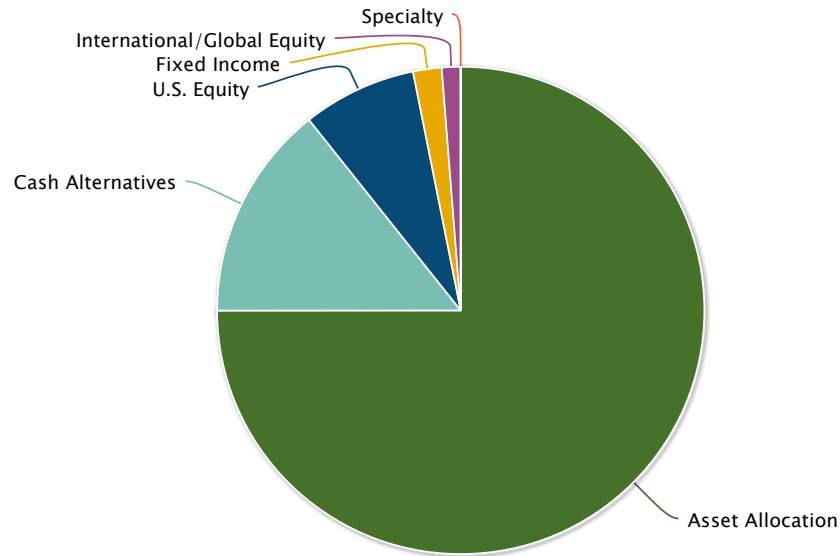
Active	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
				Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021
MassMutual Mid Cap Growth I 	\$0.00	MCG	MEFZX	1	1	1	1	0	0	0	0	2	6	6	6	8
				40.8/ 6.4	11.6	96.1	17.0/ 17.5	90.1/ 92.0	-0.51	71.0	75.0		MCG	MCG	MCG	MCG
American Century Small Cap Value R6	\$0.00	SCV	ASVDX	1	1	1	1	1	1	1	1	2	10	10	10	10
				-90.5/ -83.7	12.3	95.8	23.2/ 14.6	106.5/ 94.8	0.74	7.0	7.0		SCV	SCV	SCV	SCV
AB Small Cap Growth Advisor	\$810.75	SCG	QUAYX	1	1	1	1	1	1	1	1	2	10	10	10	9
				99.4/ -76.5	19.4	93.6	20.7/ 25.4	118.1/ 84.6	1.89	9.0	5.0		SCG	SCG	SCG	SCG
American Funds Europacific Growth F3	\$0.00	ILCG	FEUPX	1	1	1	1	0	1	1	1	2	9	10	10	10
				45.5/ 3.7	9.9	86.6	15.6/ 12.1	110.8/ 114.9	0.05	29.0	28.0		ILCG	ILCG	ILCG	ILCG
American Funds Capital World Gr&Inc F3 	\$0.00	GE	FWGIX	1	1	1	1	0	0	0	0	2	6	7	9	9
				3.8/ 45.8	21.8	98.2	13.9/ 12.1	91.6/ 93.4	-0.54	51.0	52.0		GE	GE	GE	GE
PIMCO Total Return A	\$10,513.35	CFI	PTTAX	1	1	1	1	1	1	1	0	2	9	9	10	10
				15.5/ 60.1	12.3	90.4	3.4/ 3.3	103.1/ 95.0	0.33	47.0	52.0		CFI	CFI	CFI	CFI
PIMCO Real Return A 	\$5,129.50	UGT	PRTNX	1	1	1	0	0	0	1	1	1	6	6	8	6
				-85.7/ 84.6	2.1	96.1	3.8/ 4.2	98.8/ 102.0	-0.21	21.0	23.0	T	UGT	UGT	UGT	UGT
MassMutual High Yield I	\$0.00	HY	MPHZX	1	1	1	1	0	0	1	1	2	8	8	8	8
				97.1/ -97.1	1.6	97.0	7.4/ 6.4	100.9/ 102.1	-0.01	27.0	29.0		HY	HY	HY	HY
Invesco Real Estate Y	\$0.00	REI	IARYX	1	1	1	1	1	1	1	1	2	10	10	10	10
				-80.8/ 85.0	8.5	93.8	15.5/ 6.8	87.2/ 80.3	0.25	48.0	40.0		REI	REI	REI	REI

Scorecard™ - HRA Plan

continued

Active	Assets	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
				Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021
Hartford Healthcare Y	\$0.00	HC	HGHYX	1	1	1	1	0	1	1	1	2	9	9	8	7
				-98.3/ -54.3	7.0	86.6	16.0/ 14.6	102.6/ 103.9	0.01	49.0	48.0		HC	HC	HC	HC
Passive	Assets	Asset Class	Ticker/ ID	Style				Peer Group				Qual	Score			
				Style	Style Drift	R ²	Tracking Error	TE Rank	Expense Rank	Return Rank	SR Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021
Vanguard Total Stock Mkt Idx Adm	\$7,830.40	LCB-P	VTSAX	1	1	1	1	1	1	1	1	2	10	10	10	10
				5.7/ 84.7	1.5	99.9	0.8	14.0	12.0	15.0	46.0		LCB- P	LCB- P	LCB- P	LCB- P
Vanguard Mid Cap Index Admiral	\$25,467.02	MCB-P	VIMAX	1	1	1	1	1	1	1	1	2	10	9	9	9
				-13.3/ 8.1	4.8	99.7	1.3	17.0	8.0	3.0	3.0		MCB- P	MCB- P	MCB- P	MCB- P
Vanguard Small Cap Index Adm	\$2,641.65	SCB-P	VSMAX	1	0	1	1	0	1	1	1	2	8	9	8	8
				-7.5/ -51.4	8.8	97.9	3.8	83.0	8.0	3.0	3.0		SCB- P	SCB- P	SCB- P	SCB- P
Vanguard Developed Markets Index Admiral	\$12,299.19	ILCB-P	VTMGX	1	1	1	1	0	1	1	1	2	9	9	9	9
				-13.7/ 16.6	14.8	98.5	2.4	86.0	17.0	10.0	18.0		ILCB- P	ILCB- P	ILCB- P	ILCB- P
Vanguard Total Bond Market Index Adm	\$2,881.30	CFI-P	VBTLX	1	0	1	1	1	1	1	1	2	9	9	10	10
				15.7/ 64.6	12.6	99.3	0.3	64.0	16.0	15.0	20.0		CFI- P	CFI- P	CFI- P	CFI- P

Plan Allocation by Investment Type - HRA Plan



Investment Type	Assets	Percentage
Asset Allocation	\$735,290.16	75.0%
Cash Alternatives	\$140,181.80	14.3%
U.S. Equity	\$74,166.71	7.6%
Fixed Income	\$18,524.15	1.9%
International/Global Equity	\$12,299.19	1.3%
Specialty	\$0	0.0%
Total	\$980,462.01	100%

as of 9/30/2021

Plan Allocation by Investment Type - HRA Plan

Investment Name	Asset Class	Amount	Percentage	Score
Asset Allocation		\$735,290		
Vanguard Target Retirement Income Inv	CON	\$671,095	68.4%	8
Vanguard Target Retirement 2015 Inv	MC	\$0	0.0%	8
Vanguard Target Retirement 2025 Inv	MOD	\$24,419	2.5%	8
Vanguard Target Retirement 2035 Inv	MA	\$0	0.0%	8
Vanguard Target Retirement 2055 Inv	AGG	\$4,639	0.5%	7
Vanguard Target Retirement 2045 Inv	AGG	\$35,138	3.6%	7
Cash Alternatives		\$140,182		
MassMutual Stable Value Group	SV	\$140,182	14.3%	
U.S. Equity		\$74,167		
Parnassus Core Equity Investor	LCB	\$14,816	1.5%	9
American Funds Fundamental Invs F3	LCB	\$20,922	2.1%	6
Vanguard Total Stock Mkt Idx Adm	LCB-P	\$7,830	0.8%	10
American Funds Growth Fund of Amer F3	LCG	\$1,679	0.2%	6
Vanguard Mid Cap Index Admiral	MCB-P	\$25,467	2.6%	10
MassMutual Mid Cap Growth I	MCG	\$0	0.0%	6
American Century Small Cap Value R6	SCV	\$0	0.0%	10
Vanguard Small Cap Index Adm	SCB-P	\$2,642	0.3%	8
AB Small Cap Growth Advisor	SCG	\$811	0.1%	10
Fixed Income		\$18,524		
PIMCO Total Return A	CFI	\$10,513	1.1%	9
Vanguard Total Bond Market Index Adm	CFI-P	\$2,881	0.3%	9
PIMCO Real Return A	UGT	\$5,130	0.5%	6
MassMutual High Yield I	HY	\$0	0.0%	8

Plan Allocation by Investment Type - HRA Plan

Investment Name	Asset Class	Amount	Percentage	Score
International/Global Equity		\$12,299		
Vanguard Developed Markets Index Admiral	ILCB-P	\$12,299	1.3%	9
American Funds Europacific Growth F3	ILCG	\$0	0.0%	9
American Funds Capital World Gr&Inc F3	GE	\$0	0.0%	6
Specialty		\$0		
Invesco Real Estate Y	REI	\$0	0.0%	10
Hartford Healthcare Y	HC	\$0	0.0%	9
Total		\$980,462	100.0%	

Score History

Target Date Series

Asset Allocation	Asset Class	Risk Index	Allocation Score (Series Funds)		Selection Score (Underlying Funds)		Blended Score							
			# of Funds	Avg Score	# of Funds	Avg Score	Q3 2021	Q2 2021	Q1 2021	Q4 2020	Q3 2020	Q2 2020	Q1 2020	Q4 2019
Vanguard Instl Trgt Retire Target Date Series Instl	AGG	85	12	7.9	5	8.2	8	8	9	8	9	8	-	-

Allocation (Series Funds)

Asset Allocation	Asset Class	Ticker/ ID	Score							
			Q3 2021	Q2 2021	Q1 2021	Q4 2020	Q3 2020	Q2 2020	Q1 2020	Q4 2019
Vanguard Instl Trgt Retire Inc Instl	CON	VITRX	8	8	9	8	8	8	-	-
			CON	CON	CON	CON	CON	CON	-	-
Vanguard Instl Trgt Retire 2015 Instl	MC	VITVX	9	9	9	9	9	9	-	-
			MC	MC	MC	MC	MC	MC	-	-
Vanguard Instl Trgt Retire 2020 Instl	MOD	VITWX	9	9	9	9	9	9	-	-
			MOD	MOD	MOD	MOD	MOD	MOD	-	-
Vanguard Instl Trgt Retire 2025 Instl	MOD	VRIVX	8	8	9	9	9	9	-	-
			MOD	MOD	MOD	MOD	MOD	MOD	-	-
Vanguard Instl Trgt Retire 2030 Instl	MOD	VTTWX	8	8	9	9	9	9	-	-
			MOD	MOD	MOD	MA	MOD	MA	-	-

Score History

continued

Allocation (Series Funds)

Asset Allocation	Asset Class	Ticker/ ID	Score							
			Q3 2021	Q2 2021	Q1 2021	Q4 2020	Q3 2020	Q2 2020	Q1 2020	Q4 2019
Vanguard Instl Trgt Retire 2035 Instl	MA	VITFX	8	8	9	9	9	9	-	-
			MA	MA	MA	MA	MA	MA	-	-
Vanguard Instl Trgt Retire 2040 Instl	MA	VIRSX	8	8	9	9	9	9	-	-
			MA	MA	MA	MA	MA	MA	-	-
Vanguard Instl Trgt Retire 2045 Instl	AGG	VITLX	8	8	8	8	8	8	-	-
			AGG	AGG	AGG	AGG	AGG	AGG	-	-
Vanguard Instl Trgt Retire 2050 Instl	AGG	VTRLX	8	8	8	8	8	8	-	-
			AGG	AGG	AGG	AGG	AGG	AGG	-	-
Vanguard Instl Trgt Retire 2055 Instl	AGG	VIVLX	8	8	9	8	8	8	-	-
			AGG	AGG	AGG	AGG	AGG	AGG	-	-
Vanguard Instl Trgt Retire 2060 Instl	AGG	VILVX	8	8	8	8	8	8	-	-
			AGG	AGG	AGG	AGG	AGG	AGG	-	-
Vanguard Instl Trgt Retire 2065 Instl	AGG	VSXFX	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-

Score History

Core Lineup

Active	Asset Class	Ticker/ ID	Score							
			Q3 2021	Q2 2021	Q1 2021	Q4 2020	Q3 2020	Q2 2020	Q1 2020	Q4 2019
American Funds American Mutual R6	LCV	RMFGX	10	10	10	10	10	10	10	10
			LCV	LCV	LCV	LCV	LCV	LCV	LCV	LCV
Parnassus Core Equity Institutional	LCB	PRILX	9	10	9	9	10	10	10	9
			LCB	LCB	LCB	LCB	LCB	LCB	LCB	LCB
American Funds Fundamental Invs R6	LCB	RFNGX	6	8	8	8	8	8	9	10
			LCB	LCB	LCB	LCB	LCB	LCB	LCB	LCB
American Funds Growth Fund of Amer R6	LCG	RGAGX	6	6	7	6	6	6	8	8
			LCG	LCG	LCG	LCG	LCG	LCG	LCG	LCG
American Century Mid Cap Value R6	MCV	AMDVX	7	8	9	9	10	10	10	10
			MCV	MCV	MCV	MCV	MCV	MCV	MCV	MCV
MassMutual Mid Cap Growth I	MCG	MEFZX	6	6	6	8	8	8	8	10
			MCG	MCG	MCG	MCG	MCG	MCG	MCG	MCG
Small Cap Value I1 (BMO Disciplined SCV)	SCV	97181N296	5	5	7	8	7	10	10	10
			SCV	SCV	SCV	SCV	SCV	SCV	SCV	SCV
Small Cap Growth I1 (Victory RS SCG R6)	SCG	97181N361	10	10	10	10	10	10	10	10
			SCG	SCG	SCG	SCG	SCG	SCG	SCG	SCG
American Funds Europacific Growth R6	ILCG	RERGX	9	10	10	10	7	7	7	9
			ILCG	ILCG	ILCG	ILCG	ILCG	ILCG	ILCG	IE

Score History

continued

Active	Asset Class	Ticker/ ID	Score							
			Q3 2021	Q2 2021	Q1 2021	Q4 2020	Q3 2020	Q2 2020	Q1 2020	Q4 2019
Invesco Developing Markets R6	EME	ODVIX	10	10	10	10	10	10	10	10
			EME	EME	EME	EME	EME	EME	EME	EME
American Funds Capital World Gr&Inc R6	GE	RWIGX	7	7	9	9	8	9	9	8
			GE	GE	GE	GE	GE	GE	GE	GE
PIMCO Total Return Instl	CFI	PTTRX	10	10	10	10	10	10	7	9
			CFI	CFI	CFI	CFI	CFI	CFI	CFI	CFI
PIMCO Long-Term Real Return Instl	UGT	PRAIX	6	6	6	7	8	6	5	6
			UGT	UGT	UGT	UGT	UGT	UGT	UGT	UGT
MassMutual High Yield I	HY	MPHZX	8	8	8	8	8	8	10	10
			HY	HY	HY	HY	HY	HY	HY	HY
SAGIC Core Bond	SV		-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-
Invesco Real Estate R5	REI	IARIX	10	10	10	10	10	10	10	10
			REI	REI	REI	REI	REI	REI	REI	REI
Hartford Healthcare HLS IA	HC	HIAHX	9	10	8	7	7	6	7	7
			HC	HC	HC	HC	HC	HC	HC	HC
Schwab PCRA	SPC	schwab.massmutual	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-

Score History

Passive	Asset Class	Ticker/ ID	Score							
			Q3 2021	Q2 2021	Q1 2021	Q4 2020	Q3 2020	Q2 2020	Q1 2020	Q4 2019
Vanguard Institutional Index I	LCB-P	VINIX	10	10	10	10	10	10	10	10
			LCB-P	LCB-P	LCB-P	LCB-P	LCB-P	LCB-P	LCB-P	LCB-P
Vanguard Total Stock Mkt Idx Inv	LCB-P	VTSMX	10	10	10	10	10	10	10	9
			LCB-P	LCB-P	LCB-P	LCB-P	LCB-P	LCB-P	LCB-P	LCB-P
Vanguard Mid Cap Index Institutional	MCB-P	VMCIX	10	9	9	9	9	9	10	10
			MCB-P	MCB-P	MCB-P	MCB-P	MCB-P	MCB-P	MCB-P	MCB-P
Vanguard Small Cap Index I	SCB-P	VSCIX	8	9	8	8	9	9	9	9
			SCB-P	SCB-P	SCB-P	SCB-P	SCB-P	SCB-P	SCB-P	SCB-P
Vanguard Developed Markets Index Inv	ILCB-P	VDVIX	9	9	9	9	9	9	9	9
			ILCB-P	ILCB-P	ILCB-P	ILCB-P	ILCB-P	ILCB-P	ILCB-P	ILCB-P
Vanguard Total Bond Market Index I	CFI-P	VBTIX	9	9	10	10	10	10	10	10
			CFI-P	CFI-P	CFI-P	CFI-P	CFI-P	CFI-P	CFI-P	CFI-P
Bank of the West Savings	SV-P	NA	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-
Vanguard Utilities Index Adm	UTI-P	VUIAX	10	10	10	10	10	10	10	10
			UTI-P	UTI-P	UTI-P	UTI-P	UTI-P	UTI-P	UTI-P	UTI-P

Style Box

Asset Allocation - Conservative	Asset Allocation - Moderate	Asset Allocation - Aggressive
		Vanguard Instl Trgt Retire Target Date Series Instl (8)
Large Cap Value	Large Cap Blend	Large Cap Growth
American Funds American Mutual R6 (10)	Vanguard Institutional Index I (10) Vanguard Total Stock Mkt Idx Inv (10) Parnassus Core Equity Institutional (9) American Funds Fundamental Invs R6 (6) 🚩	American Funds Growth Fund of Amer R6 (6) 🚩
Mid/Smid Cap Value	Mid/Smid Cap Blend	Mid/Smid Cap Growth
American Century Mid Cap Value R6 (7)	Vanguard Mid Cap Index Institutional (10)	MassMutual Mid Cap Growth I (6) 🚩
Small Cap Value	Small Cap Blend	Small Cap Growth
Small Cap Value I1 (BMO Disciplined SCV) (5) 🚩	Vanguard Small Cap Index I (8)	Small Cap Growth I1 (Victory RS SCG R6) (10)
International Equity	Global Equity	Cash Alternatives
Invesco Developing Markets R6 (10) American Funds Europacific Growth R6 (9) Vanguard Developed Markets Index Inv (9)	American Funds Capital World Gr&Inc R6 (7)	Bank of the West Savings (-) SAGIC Core Bond (-)
Fixed Income	Specialty/Alternatives	Notes
PIMCO Total Return Instl (10) Vanguard Total Bond Market Index I (9) MassMutual High Yield I (8) PIMCO Long-Term Real Return Instl (6) 🚩	Invesco Real Estate R5 (10) Vanguard Utilities Index Adm (10) Hartford Healthcare HLS IA (9) Schwab PCRA (-)	1. Target Date Fund series show the series name, glidepath risk posture and the average score. 2. Risk based funds are grouped into either conservative, moderate or aggressive style boxes. 3. Only the top 5 scoring funds in each asset class are shown due to spacing concerns.

Considerations:  Add

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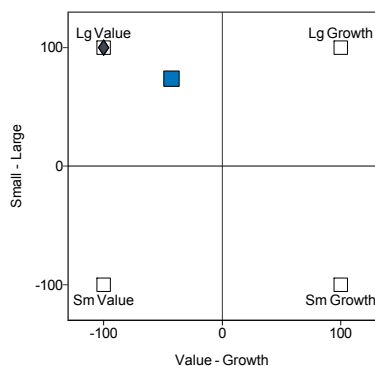
 Watchlist

Returns Analysis	QTR	YTD	1 Yr	3 Yr Ann.	5 Yr Ann.	10 Yr Ann.	Since Inception	Manager Name	Manager Tenure (Years)	Fund Inception	Net Exp. Ratio	Gross Exp. Ratio
American Funds American Mutual R6	-0.28	13.22	22.67	10.18	11.69	13.05	13.08	Joyce E. Gordon	15.76	02/21/1950	0.27	0.27
◆ Russell 1000 Value Index	-0.78	16.14	35.01	10.07	10.94	13.51						
Large Cap Value Average	-0.74	16.12	34.98	9.42	10.84	12.50					1.27	0.96

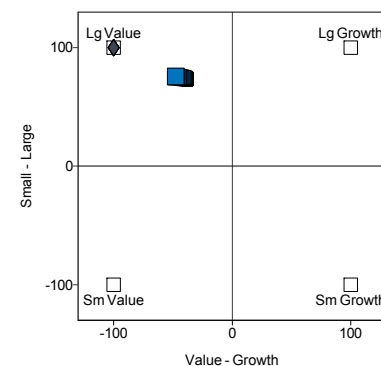
Calendar Year Returns	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD
American Funds American Mutual R6	12.67	28.30	12.95	-2.57	14.53	17.99	-1.78	22.12	5.10	13.22
◆ Russell 1000 Value Index	17.51	32.53	13.45	-3.83	17.34	13.66	-8.27	26.54	2.80	16.14
Large Cap Value Average	14.68	31.28	10.46	-3.21	14.99	15.39	-9.11	25.56	2.90	16.12

Scorecard - Active	Ticker/ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Style	Style Drift	R ²	Risk/Return	Up/Down	Info Ratio	Return Rank	Info Ratio Rank	(2pt. max)	09/30 2021	06/30 2021	03/31 2021	12/31 2020
American Funds American Mutual R6	RMFGX	1	1	1	1	1	1	1	1	2	10	10	10	10
		-42.87/73.75	3.78	93.64	12.03/11.69	81.66/69.62	0.14	11.00	20.00		LCV	LCV	LCV	LCV

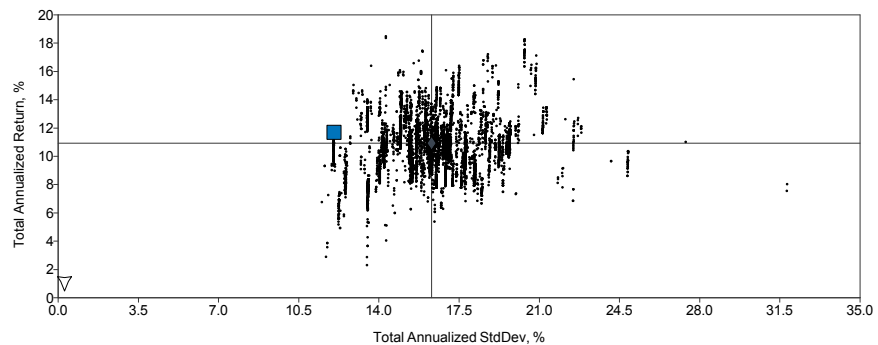
Average Style Oct 16 - Sep 21



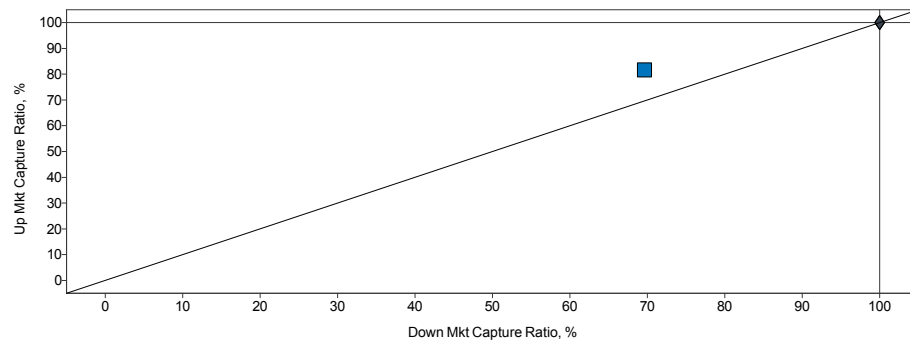
Style Drift 36 Month rolling windows, Oct 16 - Sep 21



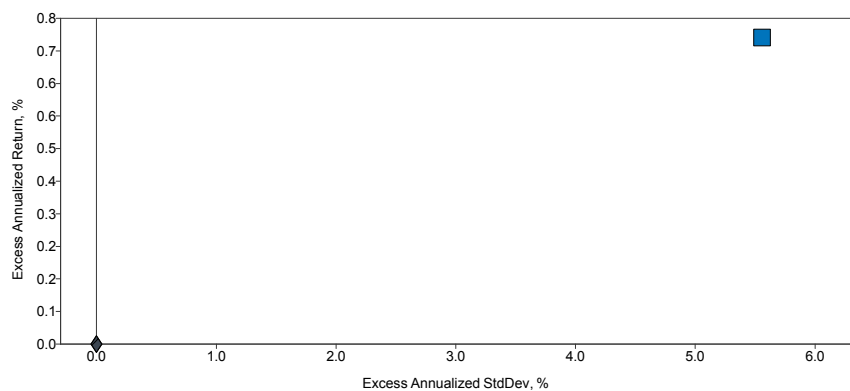
Risk / Return *Single Computation, Oct 16 - Sep 21*



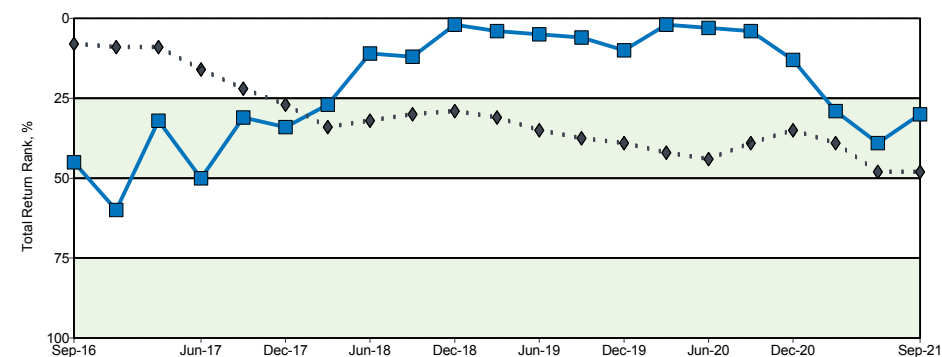
Up/Down Capture *Oct 16 - Sep 21*



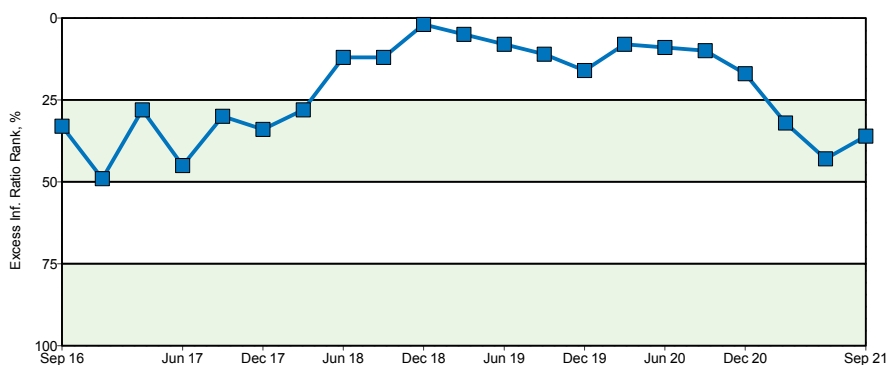
Relative Risk Return *Oct 16 - Sep 21*



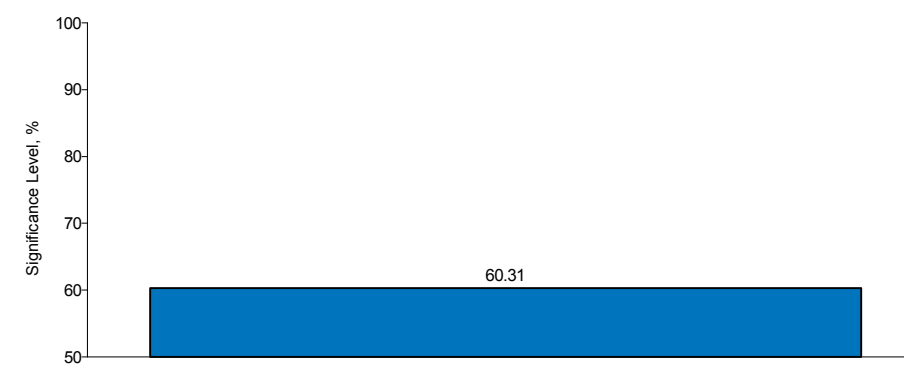
Rolling 5 Year Return Rank *20 quarter rolling windows, Oct 11 - Sep 21*



Rolling 5 Year Information Ratio Rank *20 quarter rolling windows, Oct 11 - Sep 21*



Significance Level *Oct 16 - Sep 21*



Investment objectives and strategies vary among fund, and may not be similar for funds included in the same asset class. All definitions are typical category representations. Please note that all investments are subject to market and other risk factors, which could result in loss of principal. Fixed income securities carry interest rate risk. As interest rates rise, bond prices usually fall, and vice versa. The specific share classes or accounts identified above may not be available or chosen by the plan. Share class and account availability is unique to the client's specific circumstances. There may be multiple share classes or accounts available to the client from which to choose. All recommendations are subject to vendor/provider approval before implementation into the plan. The performance data quoted may not reflect the deduction of additional fees, if applicable. If reflected, additional fees would reduce the performance quoted. Performance data is subject to change without prior notice.

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. The information used in the analysis has been taken from sources deemed to be reliable, including, third-party providers such as Markov Processes International, Morningstar, firms who manage the investments, and/or the retirement plan providers who offer the funds. Every reasonable effort has been made to ensure completeness and accuracy; however, the final accuracy of the numbers and information is the responsibility of the investment manager(s) of each fund and/or the retirement plan providers offering these funds. Discrepancies between the figures reported in this analysis, and those reported by the actual investment managers and/or retirement plan providers, may be caused by a variety of factors, including: Inaccurate reporting by the manager/provider; Changes in reporting by the manager/provider from the time this report was prepared to a subsequent retro-active audit and corrected reporting; Differences in fees and share-classes impacting net investment return; and, Scriveners error by your advisor in preparing this report.

The enclosed Investment Due Diligence report, including the Scorecard System, is intended for plan sponsor and/or institutional use only. The materials are not intended for participant use. The purpose of this report is to assist fiduciaries in selecting and monitoring investment options. A fund's score is meant to be used by the plan sponsor and/or fiduciaries as a tool for selecting the most appropriate fund. Fund scores will change as the performance of the funds change and as certain factors measured in the qualitative category change (e.g., manager tenure). Fund scores are not expected to change dramatically from each measured period, however, there is no guarantee this will be the case. Scores will change depending on the changes in the underlying pre-specified Scorecard factors.

Performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted. Likewise, a fund's score using the Scorecard System does not guarantee the future performance or style consistency of a fund. This report was prepared with the belief that this information is relevant to the plan sponsor as the plan sponsor makes investment selections. Fund selection is at the discretion of the investment fiduciaries, which are either the plan sponsor or the committee appointed to perform that function. Cash Equivalents (e.g., money market fund) and some specialty funds are not scored by the Scorecard System. The enclosed Investment Due Diligence report and Scorecard is not an offer to sell mutual funds. An offer to sell may be made only after the client has received and read the appropriate prospectus. For the most current month-end performance, please contact your advisor. The Strategy Review notes section is for informational purposes only. The views expressed here are those of your advisor and do not constitute an offer to sell an investment. An offer to sell may be made only after the client has received and read the appropriate prospectus.

Mutual funds are sold by prospectus only. Before investing, investors should carefully consider the investment objectives, risks, charges and expenses of a mutual fund. The fund prospectus provides this and other important information. Please contact your Investment Advisor/Consultant or Vendor/Provider to obtain a prospectus. Please read the prospectus carefully before investing or sending money.

For a copy of the most recent prospectus, please contact your Investment Advisor/Consultant or Vendor/Provider.


Notes


1. All statistics calculated over a five year time period.
2. Style analytics reflect the parameters on a returns-based style map (on a scale of 100 to -100 for each axis.) Fund passes if it plots out in the appropriate section of the style map, representing the fund's stated style.
3. Style drift is measured by the style drift score, which is a statistic measuring the rolling style-based analysis for a fund.
4. Risk is measured as the fund's standard deviation of returns.
5. R-squared measures the percentage of the fund's movement that is explained by the fund's benchmark (market).
6. Up/Down capture statistics measure the percentage of performance the fund/strategy is capturing versus the benchmark (market).
7. Information Ratio is a risk adjusted performance statistic measuring relative return over relative risk.
8. Peer group ranking statistics measure the funds median rank versus the applicable peer group universe.
9. Qualitative Detail: T = Tenure (qualitative score impacted negatively due to low manager tenure); E = Expenses (qualitative score impacted negatively due to higher than average expense ratio); and S = Statistics (qualitative score impacted negatively due to weak/poor strength of statistics).

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Considerations

Watchlist															
Active	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021
American Funds Fundamental Invs R6 	LCB	RFNGX	1	1	1	1	0	0	0	0	2	6	8	8	8
			-16.2/ 81.6	6.4	96.6	14.9/ 15.0	91.2/ 97.0	-0.72	51.0	55.0		LCB	LCB	LCB	LCB

Watchlist															
Active	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021
American Funds Growth Fund of Amer R6 	LCG	RGAGX	1	1	1	1	0	0	0	0	2	6	6	7	6
			72.2/ 61.6	13.3	94.0	15.8/ 20.1	87.6/ 90.1	-0.67	71.0	67.0		LCG	LCG	LCG	LCG

Watchlist															
Active	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021
MassMutual Mid Cap Growth I 	MCG	MEFZX	1	1	1	1	0	0	0	0	2	6	6	6	8
			40.8/ 6.4	11.6	96.1	17.0/ 17.5	90.1/ 92.0	-0.51	71.0	75.0		MCG	MCG	MCG	MCG

Watchlist															
Active	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank		2pt Max	Q3 2021	Q2 2021	Q1 2021
Small Cap Value I1 (BMO Disciplined SCV) 	SCV	97181N296	1	0	1	0	0	0	1	0	2	5	5	7	8
			-95.3/ -80.0	21.8	97.2	22.6/ 10.2	101.5/ 104.5	-0.22	50.0	55.0		SCV	SCV	SCV	SCV

Considerations

Watchlist															
Active	Asset Class	Ticker/ ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R ²	Risk/ Return	Up/ Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q3 2021	Q2 2021	Q1 2021	Q4 2020
PIMCO Long-Term Real Return Instl 	UGT	PRAIX	0	0	1	1	0	1	1	1	1	6	6	6	7
			10.7/ 83.6	54.5	82.5	9.7/ 7.5	211.5/ 241.7	0.49	1.0	1.0	T	UGT	UGT	UGT	UGT

Summary of Considerations

Watchlist	Asset Class	Fund	Score
	LCB	American Funds Fundamental Invs R6	6
	LCG	American Funds Growth Fund of Amer R6	6
	MCG	MassMutual Mid Cap Growth I	6
	SCV	Small Cap Value I1 (BMO Disciplined SCV)	5
	UGT	PIMCO Long-Term Real Return Instl	6

Considerations:  Add  Delete  Watchlist

**The County of San Mateo
457(b) Deferred Compensation Plan**

Investment Policy Statement

November 5, 2020

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Sample Investment Policy Statement

Part I. THE PLAN

The County of San Mateo (the "County") sponsors a deferred compensation plan (the "Plan") for the benefit of its employees and their designated beneficiaries. The County will appoint a Committee to serve as the Plan fiduciary. The Plan is intended to provide participating employees long-term accumulation of savings through contributions to individual participant accounts and the earnings thereon.

The County has established a Deferred Compensation Plan ("Plan") for the benefit of employees in accordance with Section 457(b) of the Internal Revenue Code ("Internal Revenue Code") of 1986, as amended. In addition, the Plan is intended to comply with the concepts contained ERISA Section 404(c) as a best practice.

The Plan's participants and beneficiaries are expected to have different investment objectives, time horizons and risk tolerances. To meet these varying investment needs, participants and beneficiaries will be able to direct their account balances among a range of investment options to construct diversified portfolios that reasonably span the risk/return spectrum. Participants and beneficiaries alone bear the risk of investment results from the options and their asset allocation.

Part II. THE PURPOSE OF THE INVESTMENT POLICY STATEMENT

This Investment Policy Statement is intended to assist the Plan's fiduciaries by establishing guidelines for making investment-related decisions in a prudent manner. It outlines the underlying philosophies and processes for the selection, monitoring and evaluation of the investment options offered by the Plan.

Specifically, this Investment Policy Statement:

- Defines the Plan's investment objectives.
- Defines the roles of those responsible for the Plan's investments.
- Describes the criteria and procedures for selecting the investment options.
- Establishes investment procedures, measurement standards and monitoring procedures.
- Describes corrective actions the committee can take should investment options and investment managers fail to satisfy established objectives.
- Describes the types of educational materials to be provided to Plan participants and beneficiaries.
- Describes ways to comply with fiduciary obligations and applicable laws and regulations.

This Investment Policy Statement will be reviewed periodically, and, if appropriate, may be amended to reflect changes in the capital markets, plan objectives, or other factors relevant to the Plan.

Part III. INVESTMENT OBJECTIVES

The Committee will select the Plan's investment options based on criteria deemed relevant, from time to time, by the Committee. These criteria may include, but are not limited to, the following:

- Maximization of return within reasonable and prudent levels of risk.
- Provision of returns comparable to returns for similar investment options.
- Provision of exposure to a wide range of investment opportunities in various asset classes and vehicles.
- Control administrative and management costs.
- Provision of appropriate diversification within investment vehicles.
- Investment manager's adherence to stated investment objectives and style.

Part IV. ROLES AND RESPONSIBILITIES

Subject to the terms of the Plan document, the Committee is responsible for selecting the trustee(s); hiring the recordkeeper; hiring the investment consultant; selecting the investment options(s), and selecting an investment(s) for default(s) when a participant or beneficiary fails to provide investment direction. The Committee is also responsible for:

- Establishing and maintaining the Investment Policy Statement.
- Periodically evaluating the Plan's investment performance and recommending investment option changes.
- Periodically monitoring the service providers and investment consultant.
- Periodically monitoring Plan costs.
- Providing for Plan participant investment education and communication.

In executing its responsibilities, the Committee will make decisions solely in the interest of Plan participants and beneficiaries, for the exclusive purpose of providing Plan benefits and defraying reasonable administrative costs. All investments selected by the Committee are intended to meet concepts of ERISA section 404(c) as a best practice.

Part V. MONITORING OF SERVICE PROVIDERS

Service providers should be monitored on a regular basis or more frequently if applicable. Administrative and/or recordkeeping service providers may be benchmarked against, but not limited to, industry averages and/or other provider quotes. Monitoring for these service providers should include, but not be limited to, the provider's:

- Investment offerings and services
- Recordkeeping technology and services
- Compliance services and support
- Technology
- Participant access and communications
- Total Plan costs

The monitoring of the plan provider(s) is to ensure that total plan costs and services are competitive and reasonable.

Investment consultant service providers (plan and participant level) should be monitored regularly and should include, but not be limited to, the provider's:

- Investment Due Diligence processes
- Fiduciary guidance and services
- RPF/Benchmarking scope and services
- Technology
- Participant level access, communications and advice (if applicable)
- Cost

Part VI. SELECTION OF INVESTMENT OPTIONS

The selection of investment options offered under the Plan is among the Committee's most important responsibilities. Set forth below are the considerations and guidelines employed in fulfilling this fiduciary responsibility.

The Plan intends to provide an appropriate range of investment options that may span the risk/return spectrum. Further, the Plan's investment options are intended to allow Plan participants to construct portfolios consistent with their unique individual circumstances, goals, time horizons and tolerance for risk. Major asset classes to be considered may include, but are not limited to:

Conservative Investments

Cash and liquid investments including, but not limited to, money market, stable value, and guaranteed interest accounts.

Income Investments

Income oriented investments including, but not limited to, low, medium, and high quality bond funds, with short, intermediate, and/or long term duration. Management styles may be indexed and actively managed international, global, and domestic styles.

Equity Investments

Funds that invest in equity securities, both domestic and foreign, including, but not limited to, small, medium, and large market capitalization, with value, blend, and growth investment objectives, which may be actively managed or indexed.

Asset Allocation Investments

Funds or accounts that invest in a combination of conservative, income, and equity investments, "fund of funds" accounts combining several of the above investments into one or a series of investments, and "manager of managers" accounts combining several different investment styles and fund managers into one account or a series of accounts.

Other Investments

Other appropriate investments in other styles or asset classes offered through vehicles such as commingled trusts, insurance Company separate accounts through a group annuity contract, and mutual funds. Notwithstanding the foregoing, the Committee may consider, but is not required, to include in the investment menu any specific investment

asset class, option, or style.

Default Investments

The Investment Committee will evaluate and choose an investment or set of investments to serve as the default investment(s) for the Plan. The default investment(s) will be the designated investment for dollars contributed to the Plan by participants and/or the employer for which the Plan has not received investment direction.

The default investment will be selected to comply with the concepts of ERISA section 404(c)(5) and the regulations promulgated thereunder as a qualified default investment alternative (“QDIA”) as a best practice.

After determining the desired asset classes, the Committee will evaluate and choose the desired investment option(s) for the Plan’s investment menu. If an investment manager (responsible for the management of the underlying investment vehicle, such as a mutual fund, commingled account or separate account) is chosen as the investment option, the following minimum criteria should be considered:

1. The investment manager should be a bank, insurance Company, investment management, mutual fund Company or an investment advisor under the Registered Investment Advisors Act of 1940;
2. The investment manager should operate in good standing with regulators and clients, with no material pending or concluded legal actions against it; and
3. All relevant quantitative and qualitative information on the fund manager and fund should be made

available by the manager and/or vendor.

In addition to the minimum criteria above, all investments under consideration should meet the following standards for selection:

1. Investment performance should be competitive with an appropriate style-specific benchmark and the median return for an appropriate, style-specific peer group (where appropriate and available, long-term performance of an investment manager may be inferred through the performance of another investment with similar style attributes managed by such investment manager);
2. Specific risk and risk-adjusted return measures should be reviewed by the Committee and be within a reasonable range relative to appropriate, style-specific benchmark and peer group;
3. The investment manager should demonstrate adherence to the stated investment objective, without excess style drift over trailing performance periods;
4. Fees and fee structures should be competitive compared with similar investments reasonably available to the Plan;
5. The investment manager should exhibit attractive qualitative characteristics, including, but not limited to, acceptable manager tenure; and
6. The investment manager should be able to provide performance, holdings, and other relevant information in a timely fashion with specified frequency.

Furthermore, investment managers (to be used interchangeably with the term “fund” throughout the Investment Policy Statement) will be evaluated and selected utilizing an investment manager “score card,” detailed in Part VII (Investment Monitoring and Reporting). Finally, any fiduciary warranty or guarantee offered by the service provider will be considered in the investment selection process, but will not supersede the provisions of this Investment Policy Statement.

Part VII. INVESTMENT MONITORING AND REPORTING

The ongoing monitoring of investments is a regular and disciplined process. NFP and the Committee formally review investments, via a Fiduciary Investment Review, at least annually. Additionally, the Plan’s recordkeeper leads a review of the investments in 3 of the 4 quarterly meetings (note: recordkeeper applies its own set of criteria in its analysis, which is generally meant for review purposes only, and not for fund change recommendations). The Monitoring confirms that the criteria remain satisfied and that an investment option continues to be appropriate. The process of monitoring investment performance relative to specified guidelines will be consistently applied. Frequent change of investments is neither expected nor desired.

The Committee will bear in mind any and all political, social, economic or other changes that may potentially require more frequent review and consideration of investments. The following are some, but not all, general factors that may be considered in ongoing monitoring:

- Current regulatory environment,
- Current state of capital markets,
- Performance of investment alternatives,

- Utilization of accounts by Plan demographic,
- The prudent applicability of this Investment Policy Statement as written, in light of prevailing facts and circumstances.

Monitoring will utilize the same investment selection criteria used in the original selection analysis. Unusual, notable, or extraordinary events will be communicated by the investment manager and/or vendor on a timely basis to the Committee. Examples of such events include portfolio manager or team departure, violation of investment guidelines, material litigation against the investment management firm, or material changes in firm ownership structure and announcements thereof.

If overall satisfaction with the investment option is acceptable, no further action is required. If areas of dissatisfaction exist, the investment manager must take steps to remedy the deficiency. If over a reasonable period the manager is unable to resolve the issue, removal of the investment option may result.

For supported asset classes, an investment manager “score card” will be maintained and documented (see addendum) to substantiate acceptable levels of manager performance and appropriate style characteristics. Based upon objective criteria, derived from Modern Portfolio Theory concepts, each fund will receive a score reflecting its overall performance.

If a fund fails to meet the criteria standards, as determined by its score, it will be placed on a “watch list.” (In the event a fund receives a score which is below that of “watch list” status, or experiences extraordinary circumstances which may render it inappropriate to maintain, it may be considered for removal at the earliest administratively reasonable date.) If this fund continues to remain on “watch list” for the following three quarters, or four of the following seven quarters, the fund should be considered for possible removal.

If the fund meets criteria standards for four consecutive quarters, it may be removed from the watch list.

Asset Allocation funds and/or accounts (risk-based or age-based) will be scored and monitored using the previously described guidelines. Unlike other funds which are monitored and scored individually, these funds should be evaluated as a group. Due to the unique importance of these professionally managed and diversified vehicles for participants in the plan, funds or accounts failing to achieve criteria standards will be carefully reviewed before removal from the plan (in the absence of a reasonable alternative). In addition, funds with short time history should be evaluated qualitatively.

Target-Date (age-based) funds or accounts will have strategies that allow the funds or accounts to grow more conservative over time until a certain retirement date or life expectancy date. This roll down process is commonly referred to as a “glide path”. The glide path associated with a set of target-date funds should be reviewed to make sure it is appropriate, and continues to be appropriate, for the Plan and Plan’s participants.

Investments where no score is applied due to specialty focus, short time history or other unique circumstances should be reviewed using a qualitative framework.

The foregoing investment monitoring criteria shall not, under any circumstances, be taken as definitive, conclusive, or controlling for removal, termination, or continuation of an investment option. All determinations should be made by the Committee, in its sole discretion, taking into consideration all relevant facts and circumstances.

The City retains full responsibility for the offering and monitoring of any self-directed brokerage account(s) offered as an investment option, which will be reviewed periodically as determined by the City based on criteria determined by the City. Special considerations should be contemplated and discussed before allowing a self-directed brokerage account as an investment option.

Part VIII. MANAGER REMOVAL

An investment manager (i.e., fund) may be removed when the Committee has lost confidence in the manager’s ability to:

- Achieve performance, style, allocation, and/or risk objectives.
- Maintain acceptable qualitative standards (e.g., stable organization, compliance guidelines).

If the investment manager has failed to adhere to and/or remedy one or both of the above conditions, the fund should be considered for removal from the plan.

Any decision by the Committee to remove such a fund will be made on an individual basis, and will be made based on

all the known facts and circumstances, including, but not limited to:

- The objective analysis (described above)
- Administrative impact on the plan
- Timing
- Employee communication issues
- The availability of other (potential replacement) managers
- Underwriting and plan provider limitations
- Financial considerations (hard and soft dollar fees)
- Professional or client turnover
- A material change in the investment process
- Other relevant factors

Considerable judgment should be exercised in the manager removal decision-making process. A manager should be removed using one of the following approaches:

- Remove and replace (map assets) with an alternative manager.
- Freeze the assets managed by the removed manager and direct new assets to an alternative manager.
- Phase out the manager over a specific time period.
- Remove the manager and do not provide a replacement manager.

Replacement of a removed manager follows the criteria outlined in Part VI (Selection of Investment Options).

Part IX. PARTICIPANT EDUCATION AND COMMUNICATION

The Plan should communicate to employees that they can direct their own investments and investment changes. Investment communications materials, educational materials, and enrollment support should be available to help Plan participants make educated and informed choices, including:

1. Periodic enrollment and investment education, through one or more of the following: on-site meetings, phone conference, web conference, Internet, phone (voice-response and live representatives), and written materials;
2. A disclosure that is intended to comply with the concepts of ERISA Section 404(c) as a best practice;
3. Summary plan description made available to all participants;
4. General information regarding investment risk, inflation, potential taxation impact, investment earnings, and asset classes;
5. Other investment tools (e.g., investment risk profile questionnaire) to assist participants and beneficiaries in making educated and informed investment decisions; and
6. All additional information required for disclosure by the Internal Revenue Code of 1986, and all other Federal and state statutes and all regulations promulgated hereunder, and all regulatory guidance provided thereto.

Notwithstanding the foregoing, all investment education provided by the Plan and/or Committee, and all communications connected thereto, is not intended, nor shall it be construed, as investment advice to Plan participants.

Part X. COORDINATION WITH THE PLAN DOCUMENT

Notwithstanding the foregoing, if any term or condition of this Investment Policy Statement conflicts with any section of the Internal Revenue Code or regulations promulgated hereunder, or any term or condition in the Plan document, the terms and conditions of the Internal Revenue Code and the Plan document shall control.

Part XI. ERISA 404(c)

The Plan is exempt from ERISA provisions because it operates as a governmental deferred compensation plan. However, the City and the Committee intend for the Plan to comply with the concepts of ERISA Section 404(c) and the regulations there under as a best practice. Each participant/beneficiary is provided the opportunity to exercise control and to give instructions over his/her account with a frequency that is appropriate for each investment option and, finally, to choose from a broad range of investment options. Plan fiduciaries are thus relieved from liability for investment performance directly resulting from investment decisions made by Plan participants.

The intention to comply with the concepts of ERISA Section 404(c), and the regulations promulgated hereunder, will be

communicated to employees in writing.

Part XII. INVESTMENT INFORMATION AND ADMINISTRATIVE SUPPORT

The Committee should require the investment manager and/or service provider (administrator, record-keeper) to offer the following administrative information and support:

1. Daily valuation of all investments;
2. Daily access to account information via toll-free number and Internet access;
3. The ability to make investment transfers for both existing and future individual account balances on a daily basis (non-business days and holidays excluded). Certain trading practices may be limited to comply with market timing, excess trading, liquidity driven and/or related policies and procedures of the service provider and/or specific investment options;
4. Participant account investment reports produced no less frequently than annually, with similar information available via the Internet at least quarterly; and
5. Quarterly investment performance updates available for participant review via the Internet.

Part XIII. REVIEW PROCEDURES

This Investment Policy Statement will be periodically reviewed and amended, if appropriate, at any time and without notice, by action of the Committee.

It is not expected that this Investment Policy Statement will change frequently. In particular, short-term changes in the financial markets should not require amendments to this Investment Policy Statement.

NOTE: This document provides SAMPLE wording and should be reviewed by legal counsel prior to signing and executing.

Name of Plan Fiduciary	Signature
Date	

Name of Plan Fiduciary	Signature
Date	

Name of Plan Fiduciary	Signature
Date	

Scorecard System Methodology™

The **Scorecard System Methodology** incorporates both quantitative and qualitative factors in evaluating fund managers and their investment strategies. The **Scorecard System** is built around pass/fail criteria, on a scale of 0 to 10 (with 10 being the best) and has the ability to measure active, passive and asset allocation investing strategies. Active and asset allocation strategies are evaluated over a five-year time period, and passive strategies are evaluated over a three-year time period.

Eighty percent of the fund's score is quantitative (made up of eight unique factors), incorporating modern portfolio theory statistics, quadratic optimization analysis, and peer group rankings (among a few of the quantitative factors). The other 20 percent of the score is qualitative, taking into account things such as manager tenure, the fund's expense ratio relative to the average fund expense ratio in that asset class category, and the fund's strength of statistics (statistical significance). Other criteria that may be considered in the qualitative score includes the viability of the firm managing the assets, management or personnel issues at the firm, and/or whether there has been a change in direction of the fund's stated investment strategy. The following pages detail the specific factors for each type of investing strategies.

Combined, these factors are a way of measuring the relative performance, characteristics, behavior and overall appropriateness of a fund for inclusion into a plan as an investment option. General fund guidelines are shown in the "Scorecard Point System" table below. The Scorecard Point System is meant to be used in conjunction with our sample Investment Policy Statement, in order to help identify what strategies need to be discussed as a "watch-list" or removal candidate; what strategies continue to meet some minimum standards and continue to be appropriate; and/or identify new top-ranked strategies for inclusion into a plan.

Scorecard Point System	
Good:	9-10 Points
Acceptable:	7-8 Points
Watch:	5-6 Points
Poor:	0-4 Points

Scorecard System Methodology™

Target Date Fund Strategies

Target Date Fund strategies are investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached. For this type of investment strategy, the **Scorecard System** is focused on how well these managers can add value from asset allocation. Asset allocation is measured using our **Asset allocation strategies methodology** and manager selection is measured using either our **Active and/or Passive strategies methodologies**, depending on the underlying fund options utilized within the Target Date Fund strategy.

Risk-based strategies follow the same evaluation criteria and are evaluated on both their asset allocation and security selection.

Weightings	Target Date Fund Strategies	Maximum Points
Asset Allocation Score (Average) 50%	<p>The individual funds in this Score average require five years of time history to be included. See Asset Allocation strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average.</p> <p>The Funds included in this average are from the Conservative, Moderate Conservative, Moderate, Moderate Aggressive and Aggressive categories, where Funds (also referred to as “vintages”) are individually Scored according to their standard deviation or risk bucket.</p>	5
Selection Score (Average) 50%	<p>Active strategies: The individual active funds in this Score average require five years of time history to be Scored. See Active strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average.</p> <p>Passive strategies: The individual passive funds in this Score average require three years of time history to be Scored. See Passive strategies methodology for a detailed breakdown of the Scoring criteria. Funds without the required time history are not included in the Score average.</p>	5
	Total	10

Scorecard System Methodology™

Asset Allocation Strategies

Asset allocation strategies are investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are typically structured in either a risk-based format (the strategies are managed to a level of risk, e.g., conservative or aggressive) or, in an age-based format (these strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached). For this type of investment strategy, the **Scorecard System** is focused on how well these managers can add value, with asset allocation being the primary driver of investment returns and the resulting Score. *Multisector Bond (MSB) asset class* follows the same evaluation criteria with some slightly different tolerance levels where noted. These managers are also evaluated on both their asset allocation and security selection.

Weightings	Asset Allocation Strategies	Maximum Points
Style Factors 30%	Risk Level: The fund's standard deviation is measured against the category it is being analyzed in. The fund passes if it falls within the range for that category.	1
	Style Diversity: Fund passes if it reflects appropriate style diversity (returns-based) among the four major asset classes (Cash, Fixed Income, U.S. & International Equity) for the given category. <i>MSB</i> funds pass if reflect some level of diversity among fixed income asset classes (Cash, U.S. Fixed Income, Non-U.S. Fixed Income and High Yield/Emerging Markets).	1
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 90 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	1
Risk/Return Factors 30%	Risk/Return: Fund passes if its risk is less than the benchmark or its return is greater than the benchmark. Favorable risk/return characteristics are desired.	1
	Up/Down Capture Analysis: Measures the behavior of a fund in up and down markets. Fund passes with an up capture greater than its down capture. This analysis measures the relative value by the manager in up and down markets.	1
	Information Ratio: Measures a fund's relative risk and return. Fund passes if ratio is greater than 0. This statistic measures the value added above the benchmark, adjusted for risk.	1
Peer Group Rankings 20%	Returns Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile.	1
	Sharpe Ratio Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile. This ranking ranks risk-adjusted excess return.	1
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to manager tenure, fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	2
Total		10

Scorecard System Methodology™

Active Strategies

Active strategies are investment strategies where the fund manager is trying to add value and outperform the market averages (for that style of investing). Typically, these investment strategies have higher associated fees due to the active involvement in the portfolio management process by the fund manager(s). For this type of investment strategy, the **Scorecard System** is trying to identify those managers who can add value on a consistent basis within their own style of investing.

Weightings	Active Strategies	Maximum Points
Style Factors 30%	Style Analysis: Returns-based analysis to determine the style characteristics of a fund over a period of time. Fund passes if it reflects the appropriate style characteristics. Style analysis helps ensure proper diversification in the Plan.	1
	Style Drift: Returns-based analysis to determine the behavior of the fund/manager over multiple (rolling) time periods. Fund passes if the fund exhibits a consistent style pattern. Style consistency is desired so that funds can be effectively monitored within their designated asset class.	1
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 80 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	1
Risk/Return Factors 30%	Risk/Return: Fund passes if its risk is less than the benchmark or its return is greater than the benchmark. Favorable risk/return characteristics are desired.	1
	Up/Down Capture Analysis: Measures the behavior of a fund in up and down markets. Fund passes with an up capture greater than its down capture. This analysis measures the relative value by the manager in up and down markets.	1
	Information Ratio: Measures a fund's relative risk and return. Fund passes if ratio is greater than 0. This statistic measures the value added above the benchmark, adjusted for risk.	1
Peer Group Rankings 20%	Returns Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile.	1
	Information Ratio Peer Group Ranking: Fund passes if its median rank is above the 50 th percentile. This ranking ranks risk-adjusted excess return.	1
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to manager tenure, fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	2
	Total	10

Scorecard System Methodology™

Passive Strategies

Passive strategies are investment strategies where the fund manager is trying to track or replicate some area of the market. These types of strategies may be broad-based in nature (e.g., the fund manager is trying to track/replicate the entire U.S. equity market like the S&P 500) or may be more specific to a particular area of the market (e.g., the fund manager may be trying to track/replicate the technology sector). These investment strategies typically have lower fees than active investment strategies due to their passive nature of investing and are commonly referred to as index funds. For this type of investment strategy, the **Scorecard System** is focused on how well these managers track and/or replicate a particular area of the market with an emphasis on how they compare against their peers.

Weightings	Passive Strategies	Maximum Points
Style & Tracking Factors 40%	Style Analysis: Returns-based analysis to determine the style characteristics of a fund over a period of time. Fund passes if it reflects the appropriate style characteristics. Style analysis helps ensure proper diversification in the Plan.	1
	Style Drift: Returns-based analysis to determine the behavior of the fund/manager over multiple (rolling) time periods. Fund passes if the fund exhibits a consistent style pattern. Style consistency is desired so that funds can be effectively monitored within their designated asset class.	1
	R-Squared: Measures the percentage of a fund's returns that are explained by the benchmark. Fund passes with an R-squared greater than 95 percent. This statistic measures whether the benchmark used in the analysis is appropriate.	1
	Tracking Error: Measures the percentage of a fund's excess return volatility relative to the benchmark. Fund passes with a tracking error less than 4. This statistic measures how well the fund tracks the benchmark.	1
Peer Group Rankings 40%	Tracking Error Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
	Expense Ratio Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
	Returns Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
	Sharpe Ratio Peer Group Ranking: Fund passes if its median rank is above the 75 th percentile.	1
Qualitative Factors 20%	Two points may be awarded based on qualitative characteristics of the fund. Primary considerations are given to fund expenses and strength of statistics, however, other significant factors may be considered. It is important to take into account nonquantitative factors, which may impact future performance.	2
	Total	10

Manager Research Methodology

Beyond the Scorecard

The **Scorecard System**™ uses an institutional approach which is comprehensive, independent, and utilizes a process and methodology that strives to create successful outcomes for plan sponsors and participants. The **Scorecard** helps direct the additional research the Investment team conducts with fund managers throughout the year. Three of the primary factors that go into the fund manager research are people, process and philosophy.

PEOPLE	PROCESS	PHILOSOPHY
<p>Key Factors:</p> <ul style="list-style-type: none">• Fund manager and team experience• Deep institutional expertise• Organizational structure• Ability to drive the process and performance	<p>Key Factors:</p> <ul style="list-style-type: none">• Clearly defined• Consistent application• Sound and established• Clearly communicated• Successfully executed process	<p>Key Factors:</p> <ul style="list-style-type: none">• Research and ideas must be coherent and persuasive• Strong rationale• Logical and compelling• Focus on identifying skillful managers

Scorecard System Disclosures

Investment objectives and strategies vary among fund, and may not be similar for funds included in the same asset class.

All definitions are typical category representations. The specific share classes or accounts identified above may not be available or chosen by the Plan. Share class and account availability is unique to the client's specific circumstances. There may be multiple share classes or accounts available to the client from which to choose. All recommendations are subject to vendor/provider approval before implementation into the Plan. The performance data quoted may not reflect the deduction of additional fees, if applicable. If reflected, additional fees would reduce the performance quoted.

Performance data is subject to change without prior notice.

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

The information used in the analysis has been taken from sources deemed to be reliable, including, third-party providers such as *Markov Processes International*, *Morningstar*, firms who manage the investments, and/or the retirement plan providers who offer the funds.

Every reasonable effort has been made to ensure completeness and accuracy; however, the final accuracy of the numbers and information is the responsibility of the investment manager(s) of each fund and/or the retirement plan providers offering these funds. Discrepancies between the figures reported in this analysis, and those reported by the actual investment managers and/or retirement plan providers, may be caused by a variety of factors, including: Inaccurate reporting by the manager/provider; Changes in reporting by the manager/provider from the time this report was prepared to a subsequent retro-active audit and corrected reporting; Differences in fees and share-classes impacting net investment return; and, Scriveners error by your advisor in preparing this report.

The enclosed Investment Due Diligence report, including the **Scorecard System**, is intended for plan sponsor and/or institutional use only. The materials are not intended for participant use.

The purpose of this report is to assist fiduciaries in selecting and monitoring investment options. A fund's score is meant to be used by the Plan sponsor and/or fiduciaries as a tool for selecting the most appropriate fund.

Fund scores will change as the performance of the funds change and as certain factors measured in the qualitative category change (e.g., manager tenure). Fund scores are not expected to change dramatically from each measured period, however, there is no guarantee this will be the case. Scores will change depending on the changes in the underlying pre-specified Scorecard™ factors.

Neither past performance nor statistics calculated using past performance are guarantees of a fund's future performance. Likewise, a fund's score using the **Scorecard System™** does not guarantee the future performance or style consistency of a fund.

This report was prepared with the belief that this information is relevant to the Plan sponsor as the Plan sponsor makes investment selections.

Fund selection is at the discretion of the investment fiduciaries, which are either the Plan sponsor or the Committee appointed to perform that function.

Cash Equivalents (e.g., money market fund) and some specialty funds are not scored by the **Scorecard System**.

The enclosed Investment Due Diligence report and Scorecard™ is not an offer to sell mutual funds. An offer to sell may be made only after the client has received and read the appropriate prospectus.

For the most current month-end performance, please contact your advisor.

The Strategy Review notes section is for informational purposes only. The views expressed here are those of your advisor and do not constitute an offer to sell an investment. An offer to sell may be made only after the client has received and read the appropriate prospectus.

Carefully consider the investment objectives, risk factors and charges and expenses of the investment company before investing. This and other information can be found in the fund's prospectus, which may be obtained by contacting your Investment Advisor/Consultant or Vendor/Provider. Read the prospectus carefully before investing.

For a copy of the most recent prospectus, please contact your Investment Advisor/Consultant or Vendor/Provider.

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Public Sector Retirement News & Views | Q4 2021



NEW SURVEY HIGHLIGHTS ADVANTAGES OF WORKING WITH SOLE RECORDKEEPER

A recent survey by the Principal Financial Group found that plan sponsors experienced significant advantages in working with a single recordkeeper, rather than using multiple providers. Principal surveyed over 300 plan sponsors in June/July 2021 and found that those working with a sole provider indicated time savings, greater consistency, and access to a high level of expertise and increased plan features. When it comes to participant concerns, plan sponsors indicated that plans under a sole provider arrangement generally had higher participant engagement and satisfaction, as well as a deeper understanding of their retirement savings benefits and how to take advantage of them.

The survey noted seven key findings:

1. *Plan Administration is more efficient with a single recordkeeper.* Plan sponsors noted that management and administrative experience across plans was more consistent when they worked with a sole provider. Additionally, they reported they were more likely to have access to integrated reporting about their plan.
2. *Single recordkeepers provide access to expertise and plan provisions.* Plan sponsors reported they were more likely to have access to deep subject matter expertise as well as access to specialized services for their plans.
3. *Plan sponsors say they want a single point of contact.* One point of contact can be an advantage in helping plan sponsors evaluate their overall retirement plan strategy, its effectiveness, and suggesting improvements.
4. *Working with a single recordkeeper may save time.* Sponsors with multiple recordkeepers reduced their time by 17 – 50% when they switched to a single provider. This translates to as many as 14 business days in a year.

5. *Multiple recordkeepers present other potential challenges.* Common challenges for the plan sponsor include needing additional resources to keep plan data in sync and acting as the middle person in coordinating recordkeepers – which includes coordinating participant communication, plan reporting, and testing, such as for payroll data transmission.
6. *Participants can benefit from a holistic view with a single recordkeeper.* Using a single recordkeeper can help the plan sponsor provide a more integrated and comprehensive experience to their employees, helping them understand all benefits available in retirement and how they work together. This can result in participants feeling more confident in their decision making, and lead to better outcomes for the individuals and the plan overall.
7. *Integration can benefit participant satisfaction and engagement.* Quite simply, plans with a single recordkeeper who are able to realize the benefits in the key takeaways described above, are more likely to have greater employee satisfaction in their retirement plans and benefits. Of plan sponsors offering a single provider plan, 73% rated higher employee satisfaction as one of their top three outcomes, where only 60% of plan sponsors with multiple recordkeepers included higher employee satisfaction in their top three. Better employee engagement had a similar reporting breakdown.

Plan sponsors with one recordkeeper may be able to spend much less time administering their retirement plans than those with multiple recordkeepers. This may allow them to work more strategically and offer products and services to their employees that could result in higher participant engagement, satisfaction, and overall retirement preparedness.

Your NFP Advisor is available to discuss the pros and cons of using sole or multiple providers in your plan, and how to determine the best arrangement for your organization and employees. For the full study report, click [here](#).¹

WASHINGTON UPDATE

House & Senate Pension Proposals Still Alive

In our last newsletter, we reported that the House Ways & Means Committee's bill, *Securing a Strong Retirement* (HR 2954), and the Senate's companion bill *Retirement Security & Savings Act* (S. 1770) contained several similar proposals for improving retirement savings plans. Both proposals received widespread praise from many factions of the industry, including NAGDCA, the U.S. Chamber of Commerce, AARP, labor organizations, and many investment providers. Both bills are still being discussed but have yet to be referred to Congress. Because of the strong support the proposals enjoyed, NFP remains optimistic that we will see material improvements, and will keep all clients apprised of developments and how your plans will be impacted.

GAO Issues Call for Improvements to Increase Participant Fee Understanding

The US Department of Labor (DOL) fee disclosure regulations have been in place for nearly a decade. The regulations require 401(k) plan sponsors to provide participants with comprehensive fee disclosures. While the DOL regulations are directed at 401(k) plans, most other types of plans have adopted the requirements as a best practice.

At the direction of the Senate Committee on Health, Education, Labor and Pensions (HELP), the Government Accountability Office (GAO) asked the DOL to assess the effectiveness of DOL's fee disclosure regulations. The GAO report, issued in July 2021, finds that many participants still do not understand the fees they are paying for their retirement savings accounts. In fact, an alarming 41% of those surveyed thought they paid no fees at all.

The GAO report offers several recommendations the DOL could implement to improve participant understanding of fees. Interestingly, many of the recommendations were derived by the GAO looking at best practices and successes around the world. The goal of the recommendations is to improve participant understanding of fees and improve overall retirement readiness. The recommendations include using consistent terminology for investment fees, giving participants tools to calculate fees associated with different investment options and providing educational information about the cumulative effect of fees over time.

Because this report was requested by the Senate HELP committee, it is likely that lawmakers are looking for future improvements to retirement plans. In the meantime, plan sponsors can work with their providers to develop educational information that would address certain findings – namely education to help participants understand the different types of fees they are paying and how they impact their savings over time, and to teach participants how to calculate fees and charges.

To view the full GAO report, click [here](#).²

KEEP TRACK OF YOUR ADMINISTRATIVE EXPENSES & REIMBURSEMENTS

Many of NFP's clients have arrangements where their administrative fees are reimbursed by their recordkeepers. The recordkeepers typically collect a small administrative fee from participant accounts and pass these amounts through to the plan sponsor to complete the reimbursement. Because the origin of the fee reimbursements is with participant accounts, NFP has learned that the IRS is taking steps to review the accounting for administrative fee reimbursements.

NFP recommends that all plans using an administrative cost reimbursement arrangement to cover their costs of administering the plan, describe the arrangement in plan governing documents. The Investment Policy Statement, investment guidelines or committee bylaws would be logical places to document and define the arrangement. It is advisable to include how the amount of the reimbursement is determined, how it is collected from the recordkeeper, and how it is transferred to the plan sponsor. ERISA requires that subject plans spend these reimbursements within one year of collection so that participant monies do not become commingled with corporate earnings. Governmental entities, of course, are not subject to ERISA, but like other aspects of plan administration, ERISA can be a valuable resource for best practices. That being said, there is no requirement for governmental entities to spend these monies annually. Many plan sponsors use these reimbursements to help establish reserves to cover the cost of infrequent expenditures, such as the cost of conducting an RFP for a recordkeeper, legal advice to the plan, or additional plan benefits, and NFP supports this practice. Finally, NFP recommends regularly – perhaps annually – reviewing the amount of the administrative charge and how it is spent, keeping good records of revenues and expenses, and ensuring that your committee is fully informed about the collection and use of fees.

HELPING YOUR EMPLOYEES WITH STUDENT LOAN DEBT

Student loan debt is having a tremendous impact on millennials' lives. It is influencing where employees choose to work, and how they live and spend their money. College graduates with student loans want help from employers in tackling this issue, and recent studies show that 86% of employees who get help stay an average of 5 years longer.³ Employers are getting the message and rapidly adopting student loan assistance programs – their challenge, however, is to find programs that do not create budget problems.

Thrive Flexible Matching Program is an innovative new budget-neutral employee benefit program, offered through a partnership with NFP. Thrive works best with employer-sponsored retirement plans that offer matching contributions. Thrive enables employees to contribute a portion of their salary to their student loan debt and allocate their employer's retirement plan match to their loans. The program is budget-neutral, as it utilizes employer matching funds which are already budgeted.

As employers evaluate and consider strategies to improve their ability to attract and retain employees, *Thrive* is breaking new and much needed ground. Research shows that 76% of prospective employees would consider student loan payment assistance as a deciding factor in accepting a job.⁴ The program is likely to become an important new benefit that will help leading-edge employers in appealing to current and prospective employees.

To learn more about how Thrive would work for your organization and employees, visit www.thrivematching.com or ask your NFP advisor.

About NFP

NFP is a leading insurance broker and consultant that provides employee benefits, specialized property and casualty, retirement, and individual private client solutions through our licensed subsidiaries and affiliates. Our expertise is matched by our commitment to each client's goals and is enhanced by our investments in innovative technologies in the insurance brokerage and consulting space.

NFP has more than 5,800 employees and global capabilities. Our expansive reach gives us access to highly rated insurers, vendors and financial institutions in the industry, while our locally based employees tailor each solution to meet our clients' needs. We've become one of the largest insurance brokerage, consulting and wealth management firms by building enduring relationships with our clients and helping them realize their goals.

For more information, visit [nfp.com](https://www.nfp.com).

NFP GOVERNMENTAL RETIREMENT PLAN EXPERTISE



Bill Tugaw is the governmental plan practice leader for NFP. He has assisted public sector employers in meeting the fiduciary obligations associated with operating their plans for more than 30 years. Bill is a faculty instructor for the International Foundation of Employee Benefit Plans (IFEBP) on public sector 457(b), 401(a) and 403(b) plans. Bill is frequently invited to lecture on employee benefits, post-employment health plan options, requests for disclosure and requests for proposals. Bill is co-author of two books: *Deferred Compensation / Defined Contribution: New Rules / New Game for Public and Private Plans*, and *Defined Contribution Decisions: The Education Challenge*.

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Barbara A. Healy is a governmental practice leader affiliated with NFP Retirement/SST Benefits Consulting and works with public sector and non-profit educational institutions.

She has over 35 years experience exclusively assisting public sector plans, school districts, credit unions and other non-profits with their retirement and pension plans. Barbara has earned an MBA degree in finance from DePaul University. She passed the CFP® designation from the College of Financial Planning, the Certified Funds Specialist designation, the Chartered Mutual Fund Specialist designation, the Certified Retirement Administrator designation, and the ASPPA TGPC designation and the AIF designations.



Margaret Pierce is a governmental practice leader responsible for new business and client retention for NFP's Governmental and non-profit practices. Margaret provides over

20 years of experience in the retirement industry working at Smith Barney, TIAA and American Century Investments before joining NFP. Margaret earned her Bachelor of Science from Boston University and her MBA from the University of Massachusetts-Amherst. She passed the Accredited Investment Fiduciary Auditor (AIFA) and Certified Financial Planner (CFP®) designations.



Mindy Harris is a governmental practice leader that advises on best practices and industry trends for plan administration and development, and provides legislative and

best practices education to clients. Mindy works with record keepers in her clients' plans to establish and manage performance standards for plan services, providing reports and advice to clients about their record keepers' work towards meeting the performance standards. Mindy graduated from Portland State University with a Bachelor of Science degree in business administration, concentrating in financial management and accounting. Mindy also passed her CRC and CRA designations from InFRE.

Sources:

1. <https://secure02.principal.com/publicsupply/GetFile?fm=PQ13066A&ty=VOP>
2. <https://www.gao.gov/assets/gao-21-357.pdf>
3. <https://www.shrm.org/resourcesandtools/hr-topics/benefits/pages/employers-explore-repaying-student-loan-debt.aspx>
4. <https://file.asa.org/wp-content/uploads/2019/01/28203317/Life-Delayed-2015.pdf>

This material was created to provide accurate and reliable information on the subjects covered but should not be regarded as a complete analysis of these subjects. It is not intended to provide specific legal, tax or other professional advice. The services of an appropriate professional should be sought regarding your individual situation.

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Returns Analysis

Performance as of 9/30/2021

Allocation (Series Funds)






Asset Allocation	Ticker/ ID	QTR	YTD	Annualized Returns				Since Incept.	Share Class Inception	Strategy Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
Vanguard Instl Trgt Retire Inc Instl	VITRX	-0.09	3.22	8.59	7.61	6.28	-	5.81	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-0.30	2.63	7.87	7.57	6.29	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2015 Instl	VITVX	-0.16	3.62	9.65	7.82	7.21	-	6.38	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-0.45	3.64	10.32	8.17	7.15	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2020 Instl	VITWX	-0.40	5.14	13.43	9.05	8.64	-	7.47	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-0.59	5.22	14.02	9.48	8.70	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2025 Instl	VRIVX	-0.61	6.12	16.06	9.92	9.68	-	8.21	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-0.69	6.37	16.75	10.39	9.81	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2030 Instl	VTTWX	-0.76	7.11	18.40	10.51	10.49	-	8.74	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-0.80	7.34	19.06	10.96	10.63	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2035 Instl	VITFX	-0.86	8.11	20.70	11.05	11.29	-	9.26	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-0.89	8.32	21.34	11.46	11.41	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2040 Instl	VIRSX	-0.96	9.17	23.12	11.59	12.08	-	9.76	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-0.99	9.31	23.67	11.95	12.18	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2045 Instl	VITLX	-1.05	10.17	25.49	12.19	12.65	-	10.22	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-1.04	10.08	25.42	12.34	12.79	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2050 Instl	VTRLX	-1.08	10.31	25.78	12.28	12.70	-	10.26	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-1.05	10.08	25.44	12.34	12.79	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2055 Instl	VIVLX	-1.07	10.32	25.78	12.31	12.72	-	10.27	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-1.04	10.09	25.44	12.34	12.79	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2060 Instl	VILVX	-1.07	10.32	25.79	12.33	12.72	-	10.27	6/26/2015	6/26/2015	0.09	0.09
StyleBenchmark		-1.05	10.11	25.49	12.35	12.80	-	-	-	-	-	-
Vanguard Instl Trgt Retire 2065 Instl	VSXFX	-1.07	10.29	25.75	12.26	-	-	12.07	7/12/2017	7/12/2017	0.09	0.09
No Benchmark Data		-	-	-	-	-	-	-	-	-	-	-

Core Lineup

Active	Ticker/ ID	QTR	YTD	Annualized Returns				Since Incept.	Share Class Inception	Strategy Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
U.S. Equity												
Large Cap Value												
American Funds American Mutual R6	RMFGX	-0.28	13.22	22.67	10.18	11.69	13.05	13.08	5/1/2009	2/21/1950	0.27	0.27
Russell 1000 Value Index		-0.78	16.14	35.01	10.07	10.94	13.51	-	-	-	-	-
Large Cap Blend												

Returns Analysis

Performance as of 9/30/2021

Active	Ticker/ I D	QTR	YTD	Annualized Returns				Since Incept.	Share Class Inception	Strategy Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
American Funds Fundamental Invs R6 	RFNGX	-1.11	12.97	28.84	13.46	15.00	15.62	14.87	5/1/2009	8/1/1978	0.28	0.28
Parnassus Core Equity Institutional	PRILX	0.18	15.37	28.20	18.41	17.01	16.67	12.08	4/28/2006	8/31/1992	0.62	0.62
Russell 1000 Index		0.21	15.19	30.96	16.43	17.11	16.76	-	-	-	-	-
Large Cap Growth												
American Funds Growth Fund of Amer R6 	RGAGX	1.05	12.31	30.43	19.24	20.12	18.53	16.84	5/1/2009	11/30/1973	0.30	0.30
Russell 1000 Growth Index		1.16	14.30	27.32	22.00	22.84	19.68	-	-	-	-	-
Mid Cap Value												
American Century Mid Cap Value R6	AMDVX	-0.61	15.16	34.52	8.93	9.79	13.60	10.56	7/26/2013	3/31/2004	0.63	0.63
Russell Mid-Cap Value Index		-1.01	18.24	42.40	10.28	10.59	13.93	-	-	-	-	-
Mid Cap Growth												
MassMutual Mid Cap Growth I 	MEFZX	0.48	10.51	29.52	16.76	17.46	17.20	15.24	11/15/2010	5/31/2000	0.71	0.71
Russell Mid-Cap Growth Index		-0.76	9.60	30.45	19.14	19.27	17.54	-	-	-	-	-
Small Cap Value												
Small Cap Value I1 (BMO Disciplined SCV) 	97181N296	-1.21	24.88	62.27	7.58	10.21	14.63	13.28	-	7/1/2010	0.40	0.40
Russell 2000 Value Index		-2.98	22.92	63.92	8.58	11.03	13.22	-	-	-	-	-
Small Cap Growth												
Small Cap Growth I1 (Victory RS SCG R6)	97181N361	-10.56	-9.91	10.87	9.34	17.20	16.83	13.63	-	11/30/1987	0.59	0.59
Russell 2000 Growth Index		-5.65	2.82	33.27	11.70	15.34	15.74	-	-	-	-	-
International/Global Equity												
International Large Cap Growth												
American Funds Europacific Growth R6	REGX	-2.35	4.01	24.76	13.21	12.17	10.63	10.37	5/1/2009	4/16/1984	0.46	0.46
MSCI EAFE Large Growth ND USD		0.32	7.29	21.11	12.82	11.88	10.16	-	-	-	-	-
Emerging Market Equity												
Invesco Developing Markets R6	ODVIX	-9.16	-3.20	15.21	9.36	9.96	7.50	7.30	12/29/2011	11/18/1996	0.82	0.82
MSCI EM (Emerging Markets) ND USD		-8.09	-1.25	18.20	8.58	9.23	6.09	-	-	-	-	-
Global Equity												
American Funds Capital World Gr&Inc R6	RWIGX	-2.12	8.14	23.94	11.65	12.10	12.01	11.62	5/1/2009	3/26/1993	0.42	0.42
MSCI ACWI NR		-1.05	11.12	27.44	12.58	13.20	11.90	-	-	-	-	-
Fixed Income												
Core Fixed Income												
PIMCO Total Return Instl	PTTRX	0.30	-0.77	0.28	5.85	3.65	3.92	6.98	5/11/1987	5/11/1987	0.47	0.47
BB Aggregate Bond		0.05	-1.55	-0.90	5.36	2.94	3.01	-	-	-	-	-
U.S. Government TIPS												
PIMCO Long-Term Real Return Instl 	PRAIX	2.01	1.05	3.62	13.54	7.51	5.42	7.33	11/12/2001	11/12/2001	0.60	0.60
BB TIPS		1.75	3.51	5.19	7.45	4.34	3.12	-	-	-	-	-
High Yield												

Returns Analysis

Performance as of 9/30/2021

Active	Ticker/ I D	QTR	YTD	Annualized Returns				Since Incept.	Share Class Inception	Strategy Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
MassMutual High Yield I	MPHZX	1.08	6.50	14.20	6.29	6.35	7.96	7.08	3/1/2011	9/5/2000	0.53	0.53
BofA ML US High Yield Master II Index		0.94	4.67	11.46	6.62	6.35	7.30	-	-	-	-	-
Cash Alternatives												
Stable Value												
SAGIC Core Bond		-	-	-	-	-	-	-	-	-	-	-
No Benchmark Data		-	-	-	-	-	-	-	-	-	-	-
Specialty												
REIT												
Invesco Real Estate R5	IARIX	0.70	22.54	28.22	9.67	6.95	10.81	9.74	4/30/2004	5/1/1995	0.87	0.87
DJUSslct REIT United States		1.25	24.48	40.56	8.32	5.68	10.53	-	-	-	-	-
HealthCare												
Hartford Healthcare HLS IA	HIAHX	-2.05	5.91	17.08	13.80	14.62	18.37	12.83	5/1/2000	5/1/2000	0.91	0.91
S&P 1500 Health Care		1.16	13.10	23.18	12.28	14.51	17.38	-	-	-	-	-
Specialty												
Schwab PCRA	schwab.massmutual	-	-	-	-	-	-	-	-	-	-	-
No Benchmark Data		-	-	-	-	-	-	-	-	-	-	-
Passive	Ticker/ I D	QTR	YTD	Annualized Returns				Since Incept.	Share Class Inception	Strategy Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
U.S. Equity												
Large Cap Blend												
Vanguard Institutional Index I	VINIX	0.57	15.90	29.98	15.97	16.87	16.61	10.60	7/31/1990	7/31/1990	0.04	0.04
Vanguard Total Stock Mkt Idx Inv	VTSMX	-0.08	15.09	31.95	15.93	16.75	16.47	10.50	4/27/1992	4/27/1992	0.14	0.14
Russell 1000 Index		0.21	15.19	30.96	16.43	17.11	16.76	-	-	-	-	-
Mid Cap Blend												
Vanguard Mid Cap Index Institutional	VMCIX	0.02	15.33	36.11	14.75	14.60	15.57	10.71	5/21/1998	5/21/1998	0.04	0.04
Russell Mid-Cap Index		-0.93	15.17	38.11	14.22	14.39	15.52	-	-	-	-	-
Small Cap Blend												
Vanguard Small Cap Index I	VSCIX	-2.61	13.35	44.07	11.99	13.99	15.34	9.69	7/7/1997	10/3/1960	0.04	0.04
Russell 2000 Index		-4.36	12.41	47.68	10.54	13.45	14.63	-	-	-	-	-
International/Global Equity												
International Large Cap Blend												
Vanguard Developed Markets Index Inv	VDVIX	-1.60	8.13	26.44	8.08	9.07	8.51	5.86	12/19/2013	8/17/1999	0.16	0.16
MSCI EAFE ND USD		-0.45	8.35	25.73	7.62	8.81	8.10	-	-	-	-	-
Fixed Income												
Core Fixed Income												
Vanguard Total Bond Market Index I	VBPIX	0.11	-1.57	-0.91	5.42	2.95	2.98	5.00	9/18/1995	12/11/1986	0.04	0.04
BB Aggregate Bond		0.05	-1.55	-0.90	5.36	2.94	3.01	-	-	-	-	-

Returns Analysis

Performance as of 9/30/2021

Passive	Ticker/ I D	QTR	YTD	Annualized Returns				Since Incept.	Share Class Inception	Strategy Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
Cash Alternatives												
Stable Value												
Bank of the West Savings	NA	-	-	-	-	-	-	-	-	-	-	-
No Benchmark Data		-	-	-	-	-	-	-	-	-	-	-
Specialty												
Utilities												
Vanguard Utilities Index Adm	VUIAX	1.09	3.70	11.34	9.01	8.77	10.56	9.72	4/28/2004	4/28/2004	0.10	0.10
S&P 1500 Utilities		1.28	4.49	11.97	9.39	8.88	10.73	-	-	-	-	-

Disclosure

For use by Plan Sponsors or Institutional Investors Only- not intended for distribution to Retail Investors

Performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted.

The performance data quoted may not reflect the deduction of additional fees, if applicable. Additional fees would reduce the performance quoted.

Performance data is subject to change without prior notice. Expenses shown reflect the fund's prospectus Net and Gross expense ratios.

Some funds, accounts, or share classes may not be available for investment. Performance history prior to inception (if applicable) reflects another share class or account reflecting the manager's historical performance record. Expenses for mutual funds reflect the fund's prospectus Net and Gross expense ratios. In the case of Collective Investment Trust Funds, expenses generally reflect the CIT fund fact sheet and/ or Trust agreement Fund Inception Date - the date on which a fund commenced operations.

Share Class Inception Date - the date on which a fund's share class was introduced.

Contact NFP with any questions about this report or for the most current month-end performance at (800) 959-0071.

Online Report Access

Proper documentation is a must for plan governance. That's why we created the **Fiduciary Briefcase™**, an online portal that serves as your private fiduciary file. One that gives you 24/7 access to plan information, meeting summaries, compliance documents, newsletters, memos and so much more. You can access this system by going to www.nfp.com/login, selecting Fiduciary Briefcase from the drop-down menu and then enter your secure User ID and Password.



FIDUCIARY BRIEFCASE

Your resource where you will find all the documents we provide to help you reduce the fiduciary liability you face in managing your retirement plan.

Through this portal, we make pertinent plan data available to plan fiduciaries to help them better manage their plan, and organize their fiduciary file in case of an audit. Examples of resources available to our clients are:

- Fiduciary Investment Review™
- Investment policy statements and guidelines
- Meeting minutes and service plans
- Quarterly Market Reviews and plan sponsor newsletters
- General retirement education and communications
- B3 Provider Analysis™ and Fiduciary Plan Review™
- Organization of your plan's file
- Daily access to plan information
- Investment education information for investment committees
- Fiduciary liability management and instant preparation for plan audits

Glossary

Active strategies: investment strategies where the fund manager is trying to add value and outperform the market averages (for that style of investing). Typically, these investment strategies have higher associated costs due to the active involvement in the portfolio management process by the fund manager(s). For this type of investment strategy, the **Scorecard System™** is trying to identify those managers who can add value on a consistent basis within their own style of investing.

Alpha: a measure used to quantify a fund manager's value added. Alpha measures the difference between a portfolio's actual returns and what it might be expected to deliver based on its level of risk. A positive alpha means the fund has beaten expectations and implies a skillful manager. A negative alpha means that the manager failed to match performance with the given risk level.

Asset allocation strategies: investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are typically structured in either a risk-based format (the strategies are managed to a level of risk, e.g., conservative or aggressive) or, in an age-based format (these strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached). For this type of investment strategy, the Scorecard System is focused on how well these managers can add value from both asset allocation and manager selection.

Beta: a measure of risk that gauges the sensitivity of a manager to movements in the benchmark (market). If the market returns change by some amount x , then the manager returns can be expected to change by Beta times x . A Beta of 1 implies that you can expect the movement of a fund's return series to match that of the benchmark. A portfolio with a beta of 2 would move approximately twice as much as the benchmark.

Downside deviation: also referred to as downside risk. The downside standard deviation shows the average size of the deviations (from the mean) when the return is negative.

Excess return: the difference between the returns of a mutual fund and its benchmark.

Explained variance: the explained variance measures the variance of the fund that is explained by the benchmark (similar to the R-squared statistic).

Information ratio: a measure of the consistency of excess return. The ratio is calculated by taking the annualized excess return over a benchmark (numerator) and dividing it by the standard deviation of excess return (denominator). The result is a measure of the portfolio management's performance against risk and return relative to a benchmark. This is a straightforward way to evaluate the return a fund manager achieves, given the risk they take on.

Median rank: refers to the midpoint of the range numbers that are arranged in order of value (lowest to highest).

Passive strategies: investment strategies where the fund manager is trying to track or replicate some area of the market. These types of strategies may be broad-based in nature (e.g., the fund manager is trying to track/replicate the entire U.S. equity market like the S&P 500) or may be more specific to a particular area of the market (e.g., the fund manager may be trying to track/replicate the technology sector). These investment strategies typically have lower costs than active investment strategies due to their passive nature of investing and are commonly referred to as index funds. For this type of investment strategy, the Scorecard System is focused on how well these managers track and/or replicate a particular area of the market with an emphasis on how they compare against their peers.

R-squared: measures (on a scale of 0 to 100) the amount of movement of a fund's return that can be explained by that fund's benchmark. An R-squared of 100 means that all movements of a fund are completely explained by movements in the associated index (benchmark).

Returns-based style analysis: uses a fund's return series to help identify the style of the fund. This is done by comparing those returns across a specific time period to a series of index returns of various styles (Large Cap Growth, Small Cap Value, etc.) over the same period. Through quadratic optimization, the best fit style is calculated. Once the best fit is found, the fund's style can then be analyzed and weightings toward each asset class can be made.

Sharpe ratio: a ratio developed by Bill Sharpe to measure risk-adjusted performance. It is calculated by subtracting the risk-free rate from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns to measure reward on a per unit of risk basis. For example, if a bond fund returns 6% and has a standard deviation of 4% and the risk-free rate is 2% then the Sharpe Ratio for this fund will be 1. $(6-2)/4=1$.

Significance level: indicates the level of confidence (on a percentage basis) with which the statement "the manager's annualized excess return over the benchmark is positive" or "the manager's annualized excess return over the benchmark is negative," as the case may be, holds true.

Standard deviation: of return measures the average deviations of a return series from its mean (average) return. A large standard deviation implies that there have been large swings in the return series of the manager. The larger the swing, the more volatile the fund's returns and hence more implied risk. For smaller swings the opposite is true. Standard deviation helps us analyze risk by revealing how much the return on the fund is deviating.

Style drift: is the tendency of a fund to deviate from its investment style over time is style drift. This generally occurs because of a change in the fund's strategy, the manager's philosophy or even a portfolio manager change. During the 1990's dotcom boom, for example, many managers – regardless of the strategies they were initially bound by – were able to justify buying tech stocks for their portfolio, in hopes of capitalizing on the tech boom in the market at that time. Consequently, their styles "drifted" from their original strategy.

Tracking error: refers to the standard deviation of excess returns or the divergence between the return behavior of a portfolio and the return behavior of a benchmark. Tracking error is reported as a "standard deviation percentage" difference that accounts for the volatility between the return of a fund versus its benchmark.

Volatility of rank: is measured by taking the median of a series of numbers, or taking the absolute value of the distance of each individual number to that median, then finding the median of those distances. Volatility is used because it makes a better companion to the median than the standard deviation. Standard deviation is commonly used when measuring volatility around the mean (average), while volatility of rank is used for medians.

Up/Down capture: a measure of how well a manager was able to replicate or improve on periods of positive benchmark returns, and how badly the manager was affected by periods of negative benchmark returns. For example, if a fund has an up capture of 120 that means that the fund goes up 12% when the benchmark moves up 10%. The same fund has a down capture of 90 so that means the fund returns a -9% when the benchmark returns a -10%.

Asset Class Definitions

Conservative (CON): a diversified asset allocation strategy including equity with an emphasis on fixed income. Demonstrates a lower overall volatility (risk) level when compared to the other asset allocation categories.

Moderate Conservative (MC): a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON, but lower volatility level when compared to MOD, MA and AGG.

Moderate (MOD): a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON and MC, but lower volatility level when compared to MA and AGG.

Moderate Aggressive (MA): a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON, MC and MOD, but lower volatility level when compared to AGG.

Aggressive (AGG): a diversified asset allocation strategy including fixed income with an emphasis on equity. Demonstrates a higher overall volatility (risk) level when compared to the other asset allocation categories.

Large Cap Value (LCV): large capitalization companies who have lower prices in relation to their earnings or book value.

Large Cap Blend (LCB): large capitalization companies who display both value and growth-like characteristics.

Large Cap Growth (LCG): large capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher forecasted or expected growth rate.

Mid Cap Value (MCV): mid-capitalization companies who have lower prices in relation to their earnings or book value.

Mid Cap Blend (MCB): mid-capitalization companies who display both value and growth-like characteristics.

Mid Cap Growth (MCG): mid-capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher expected growth rate.

Small Cap Value (SCV): small capitalization companies who have lower prices in relation to their earnings or book value.

Small Cap Blend (SCB): small capitalization companies who display both value and growth-like characteristics.

Small Cap Growth (SCG): small capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher forecasted or expected growth rate.

SMid Value (SMCV): includes any fund categorized as SCV or MCV within Morningstar and whose primary prospectus benchmark is the Russell 2500 Value, which consists primarily of small and mid-capitalization companies who have lower prices in relation to their earnings or book value.

SMid Growth (SMCG): includes any fund categorized as SCG or MCG within Morningstar and whose primary prospectus benchmark is the Russell 2500 Growth, which consists primarily of small and mid-capitalization companies who have higher prices in relation to their earnings or book value, generally due to a higher forecasted or expected growth rate.

SMid Blend (SMCB): includes any fund categorized as SCB or MCB within Morningstar and whose primary prospectus benchmark is the Russell 2500, which consists primarily of small and mid-capitalization companies who display both value and growth-like characteristics.

Bank Loans (BL): an array of loans to corporations made by banks and other financial outfits that do not pay a fixed interest rate, but rather an adjustable one and are therefore often referred to as floating rate loans.

International Equity (IE): includes any fund whose primary prospectus benchmark is the MSCI ACWI ex USA, which includes both developed and emerging markets, and is intended to provide a broad measure of stock performance throughout the world, with the exception of U.S. based companies.

International Large Cap Value (ILCV): primarily large capitalization foreign companies displaying both value-like characteristics.

International Large Cap Blend (ILCB): primarily large capitalization foreign companies displaying both value and growth-like characteristics.

International Large Cap Growth (ILCG): primarily large capitalization foreign companies displaying growth-like characteristics.

International Small-Mid Cap Value (ISMCP): primarily small and mid-capitalization foreign companies displaying both value-like characteristics.

International Small-Mid Cap Growth (ISMG): primarily small and mid-capitalization foreign companies displaying both growth-like characteristics.

Emerging Market Equity (EME): foreign companies in countries that are not considered to have fully developed markets or economies.

Global Equity (GE): large capitalization domestic and foreign companies displaying both value and growth-like characteristics.

Core Fixed Income (CFI): domestic fixed income securities representing a broad array of fixed income securities including government, credit and mortgage-backed securities.

Intermediate Government (IG): domestic Government or Government-backed fixed income securities.

U.S. Government TIPS (UGT): treasury inflation protected securities which are Government securities designed to offer inflation protection by adjusting the principal based on changes in the Consumer Price Index.

Short-Term Bond (STB): a broad array of fixed income securities that have short durations and/or maturities (typically 1-3 years).

High Yield (HY): below investment grade domestic fixed income securities, which have a higher likelihood of default.

Global Fixed Income (GFI): a broad array of fixed income securities across many different countries.

Multisector Bond (MB): a broad array of fixed income securities across many different sectors including domestic government, corporate, sovereign and emerging markets debt. They generally have a few limitations when it comes to domicile, sectors, maturities or credit ratings.

Specialty Fixed Income (SFI): a particular segment of the stock market focused on utility companies.

Stable Value (SV): a conservative fixed income strategy that is designed to preserve capital.

Money Market (MM): conservative, short-term oriented money market securities.

Guaranteed Investment Contract (GIC): products that have some type of guarantee from the issuer or provider.

REIT (RE): real estate securities traded on a stock exchange.

Technology (TEC): a particular segment of the stock market focused on technology related companies.

Natural Resources (NR): a particular segment of the stock market focused on natural resource related companies.

HealthCare (HC): a particular segment of the stock market focused on healthcare related companies.

Communication (COM): a particular segment of the stock market focused on communications related companies.

Financial Services (FS): a particular segment of the stock market focused on financial services related companies.

Utilities (UTI): a particular segment of the stock market focused on utility companies.

Specialty (SPC): a unique area of the market

-P: Asset class abbreviations with a “-P” after the abbreviation indicate that the strategy was classified as passively managed. When not indicated, all other strategies are classified as actively managed and/or asset allocation.

Fund Fact Sheet Disclosures

Performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted.

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Performance data is subject to change without prior notice.

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

The information used in the analysis has been taken from sources deemed to be reliable, including, third-party providers such as Markov Processes International, Morningstar, firms who manage the investments, and/or the retirement plan providers who offer the funds.

Every reasonable effort has been made to insure completeness and accuracy; however, the final accuracy of the numbers and information is the responsibility of the investment manager(s) of each fund and/or the retirement plan providers offering these funds. Discrepancies between the figures reported in this analysis, and those reported by the actual investment managers and/or retirement plan providers, may be caused by a variety of factors, including: inaccurate reporting by the manager/provider; changes in reporting by the manager/provider from the time this report was prepared to a subsequent retroactive audit and corrected reporting; differences in fees and share classes impacting net investment return; and, Scriverners error by your advisor preparing this report.

Fund scores will change as the performance of the funds change and as certain factors measured in the qualitative category change (e.g., manger tenure). Fund scores are not expected to change dramatically from each measured period, however, there is no guarantee this will be the case. Scores will change depending on the changes in the underlying pre-specified Scorecard factors.

Neither past performance or statistics calculated using past performance are a guarantee of a fund's future performance. Likewise, a fund's score using the Scorecard System does not guarantee the future performance or style consistency of a fund.

The purpose of this report is to assist fiduciaries in selecting and monitoring investment options. A fund's score is meant to be used by the plan sponsor and/or fiduciaries as a tool for selecting the most appropriate fund.

Fund selection is at the discretion of the investment fiduciaries, which are either the plan sponsor or the committee appointed to perform the function.

This report is provided solely for information purposes only and therefore not an offer to buy or sell a security. An offer to buy or sell a security may be made only after the client has received and read the appropriate prospectus.

For a copy of the most recent prospectus, please contact your investment advisor/consultant.

Index Disclosures

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

Citigroup Corporate Bond is an index which serves as a benchmark for corporate bond performance. You cannot invest directly in an index.

Citigroup Mortgage Master is an index which serves as a benchmark for U.S. mortgage-backed securities performance.

Citigroup WGBI Index is an index which serves as a benchmark for global bond performance, including 22 different government bond markets.

Credit Suisse High Yield Index is an unmanaged, trader priced index constructed to mirror the characteristics of the high yield bond market.

Bloomberg Barclays U.S. Aggregate Bond (BB Aggregate Bond) represents securities that are U.S., domestic, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

BC Credit Bond Index includes publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.

BC U.S. Corporate Investment Grade represents investment grade corporate securities that are U.S., domestic, taxable, and dollar denominated.

BC High Yield Corporate Bond represents below investment grade corporate securities that are U.D., domestic, taxable, and dollar denominated.

BC TIPS Index includes publicly issued U.S. government treasury inflation protected securities that meet the specified maturity, liquidity and other requirements.

BC Mortgage-Backed Securities covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARMs) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

BC Muni Bond covers the USD-denominated long term tax exempt bond market with four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

BC Government Index includes publicly issued U.S. government securities that meet the specified maturity, liquidity and other requirements.

BarCap U.S. Aggregate 1-3 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 1-3 years.

BarCap U.S. Aggregate 3-5 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 3-5 years.

BarCap U.S. Aggregate 5-7 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 5-7 years.

BarCap U.S. Aggregate 7-10 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 7-10 years.

BarCap U.S. Aggregate 10+ Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over 10 years.

DJW 5000 (Full Cap) Index measures the performance of all U.S. common equity securities, and serves as an index of all stock trades in the U.S.

MSCI FI Emerging Markets is a rules-based index which serves as a benchmark for emerging country fixed income performance.

MSCI FI EAFE International is a rules-based index which serves as a benchmark for developed international country fixed income performance.

MSCI EAFE Index is listed for foreign stock funds (EAFE refers to Europe, Australia and Far East). Widely accepted as a benchmark for international stock performance, it is an aggregate of 21 individual country indexes.

MSCI EAFE Large Value represents the large cap value stocks within the MSCI EAFE Index.

MSCI EAFE Large Growth represents the large cap growth stocks within the MSCI EAFE Index.

MSCI EAFE Mid Value represents the mid cap value stocks within the MSCI EAFE Index.

MSCI EAFE Mid Growth represents the mid cap growth stocks within the MSCI EAFE Index.

MSCI EAFE Small Value represents the small cap value stocks within the MSCI EAFE Index.

MSCI EAFE Small Growth represents the small cap growth stocks within the MSCI EAFE Index.

MSCI EM (Emerging Markets) Index serves as a benchmark for each emerging country. The average size of these companies is (U.S.) \$400 million, as compared with \$300 billion for those companies in the World index.

MSCI World Index is a rules-based index that serves as a benchmark for the developed global equity markets.

MSCI Europe ex UK Index is a rules-based index that serves as a benchmark for Europe's equity markets, excluding the United Kingdom.

MSCI Pacific ex Japan Index is a rules-based index that serves as a benchmark for Asia Pacific's equity markets, excluding Japan.

MSCI United Kingdom Index is a rules-based index that serves as a benchmark for the United Kingdom's equity markets.

MSCI Japan is a rules-based index that serves as a benchmark for Japan's equity markets.

NAREIT All REIT Index includes all tax-qualified REITs with common shares that trade on the New York Stock Exchange the American Stock Exchange or the NASDAQ National Market List.

3-Month T-Bills (90 Day T-Bill Index) are government-backed, short-term investments considered to be risk-free and as good as cash because the maturity is only three months.

Russell 1000 Growth Index is a market-capitalization weighted index of those firms in the Russell 1000 with higher price-to-book ratios and higher forecasted growth values.

Russell 1000 Value Index is a market-capitalization weighted index of those firms in the Russell 1000 with lower price-to-book ratios and lower forecasted growth values.

Russell Top 200 Growth Index is a market-capitalization weighted index of those firms in the Russell Top 200 with higher price-to-book ratios and higher forecasted growth values.

Russell Top 200 Value Index is a market-capitalization weighted index of those firms in the Russell Top 200 with lower price-to-book ratios and lower forecasted growth values.

Russell 2000 Growth Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having higher price-to-book ratio and higher forecasted growth values.

Russell 2000 Index consists of the smallest 2000 companies in the Russell 3000 Index, representing approximately 7% of the Russell 3000 total market capitalization.

Russell 2000 Value Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having lower price-to-book ratio and lower forecasted growth values.

Index Disclosures

Russell MidCap Growth Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap Index having higher price-to-book ratio and higher forecasted growth values.

Russell MidCap Index includes firms 201 through 1000, based on market capitalization, from the Russell 3000 Index.

Russell MidCap Value Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap Index having lower price-to-book ratio and lower forecasted growth values.

Russell Top 200 Index consists of the 200 largest securities in the Russell 3000 Index.

Russell 3000 Index is a market capitalization weighted index, consisting of 3,000 U.S. common equity securities, reflective of the broad U.S. equity market.

Salomon 1-10 Yr. Governments is an index which serves as a benchmark for U.S. Government bonds with maturities ranging from 1 to 10 years.

S&P 500 Index measures the performance of the largest 500 U.S. common equity securities, and serves as an index of large cap stocks traded in the U.S.

S&P 500 Energy Index measures the performance of the energy sector in the S&P 500 Index.

S&P 500 Industrials measures the performance of the industrial sector in the S&P 500 Index.

S&P 500 Financials measures the performance of the financials sector in the S&P 500 Index.

S&P 500 Utilities measures the performance of the utilities sector in the S&P 500 Index.

S&P 500 Consumer Discretionary Index measures the performance of the consumer discretionary sector in the S&P 500 Index.

S&P 500 Consumer Staples Index measures the performance of the consumer staples sector in the S&P 500 Index.

S&P 500 Information Technology measures the performance of the information technology sector in the S&P 500 Index.

S&P 500 Materials measures the performance of the materials sector in the S&P 500 Index.

S&P 500 Health Care measures the performance of the health care sector in the S&P 500 Index.

S&P 500 Telecommunications Services Index measures the performance of the telecommunications services sector in the S&P 500 Index.

General Disclosure

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Scorecard Disclosures

Investment objectives and strategies vary among fund, and may not be similar for funds included in the same asset class.

All definitions are typical category representations. The specific share classes or accounts identified above may not be available or chosen by the plan. Share class and account availability is unique to the client's specific circumstances. There may be multiple share classes or accounts available to the client from which to choose. All recommendations are subject to vendor/provider approval before implementation into the plan.

The performance data quoted may not reflect the deduction of additional fees, if applicable. If reflected, additional fees would reduce the performance quoted.

Performance data is subject to change without prior notice.

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

The information used in the analysis has been taken from sources deemed to be reliable, including, third-party providers such as Markov Processes International, Morningstar, firms who manage the investments, and/or the retirement plan providers who offer the funds.

Every reasonable effort has been made to ensure completeness and accuracy; however, the final accuracy of the numbers and information is the responsibility of the investment manager(s) of each fund and/or the retirement plan providers offering these funds. Discrepancies between the figures reported in this analysis, and those reported by the actual investment managers and/or retirement plan providers, may be caused by a variety of factors, including: Inaccurate reporting by the manager/provider; Changes in reporting by the manager/provider from the time this report was prepared to a subsequent retro-active audit and corrected reporting; Differences in fees and share-classes impacting net investment return; and, Scriveners error by your advisor in preparing this report.

The enclosed Investment Due Diligence report, including the Scorecard System, is intended for plan sponsor and/or institutional use only. The materials are not intended for participant use.

The purpose of this report is to assist fiduciaries in selecting and monitoring investment options. A fund's score is meant to be used by the plan sponsor and/or fiduciaries as a tool for selecting the most appropriate fund.

Fund scores will change as the performance of the funds change and as certain factors measured in the qualitative category change (e.g., manager tenure). Fund scores are not expected to change dramatically from each measured period, however, there is no guarantee this will be the case. Scores will change depending on the changes in the underlying pre-specified Scorecard factors.

Neither past performance nor statistics calculated using past performance are guarantees of a fund's future performance. Likewise, a fund's score using the Scorecard System does not guarantee the future performance or style consistency of a fund.

This report was prepared with the belief that this information is relevant to the plan sponsor as the plan sponsor makes investment selections.

Fund selection is at the discretion of the investment fiduciaries, which are either the plan sponsor or the committee appointed to perform that function.

Cash Alternatives (e.g., money market fund) and some specialty funds are not scored by the Scorecard System.

The enclosed Investment Due Diligence report and Scorecard is not an offer to sell mutual funds. An offer to sell may be made only after the client has received and read the appropriate prospectus.

For the most current month-end performance, please contact your advisor.

The Strategy Review notes section is for informational purposes only. The views expressed here are those of your advisor and do not constitute an offer to sell an investment. An offer to sell may be made only after the client has received and read the appropriate prospectus.

Carefully consider the investment objectives, risk factors and charges and expenses of the investment company before investing. This and other information can be found in the fund's prospectus, which may be obtained by contacting your Investment Advisor/Consultant or Vendor/Provider. Read the prospectus carefully before investing.

For a copy of the most recent prospectus, please contact your Investment Advisor/Consultant or Vendor/Provider.

Investment Risk Disclosures

Consider the investment objectives, risks and charges and expenses of the investment company carefully before investing. The prospectus contains this and other information about the investment company. Please contact your advisor for the most recent prospectus. Prospectus should be read carefully before investing.

International/Emerging Markets: The investor should note that funds that invest in international securities involve special additional risks. These risks include, but are not limited to, currency risk, political risk, and risk associated with varying accounting standards. Investing in emerging markets may accentuate these risks.

Sector Funds: The investor should note that funds that invest exclusively in one sector or industry involve additional risks. The lack of industry diversification subjects the investor to increased industry-specific risks.

Non-Diversified Funds: The investor should note that funds that invest more of their assets in a single issuer involve additional risks, including share price fluctuations, because of the increased concentration of investments.

Small-Cap Stocks: The investor should note that funds that invest in stocks of small cap companies involve additional risks. Smaller companies typically have a higher risk of failure, and are not as well established as larger blue-chip companies. Historically, smaller-company stocks have experienced a greater degree of market volatility than the overall market average.

Mid-Cap Stocks: The investor should note that funds that invest in companies with market capitalization below \$10 billion involve additional risks. The securities of these companies may be more volatile and less liquid than the securities of larger companies.

Data provided by Morningstar, Inc. The information in this report is (1) proprietary to MPI, Retirement Plan Advisory Group, and/or its content providers; (2) may not be copied or redistributed; and (3) is not warranted to be accurate, complete or timely.

Contact your advisor with any questions about this report or for the most current month-end performance.

The information presented within this market commentary is intended for informational purposes only and cannot be guaranteed. Please direct all questions and comments concerning this report to your advisor.

High-Yield Bonds: The investor should note that funds that invest in lower-rated debt securities (commonly referred to as junk bonds) involve additional risks because of the lower credit quality of the securities in the portfolio. The investor should be aware of the possible higher level of volatility, and increased risk of default.

Bond/Fixed Income Funds: The investor should note that funds that invest in bonds (fixed income securities), including government, corporate and mortgage-backed securities, involve additional risks. Interest rate risk may cause bonds to lose their value. The investor should be aware that it is possible in a rising rate environment for investment grade bond strategies to lose value and experience negative returns over certain time periods.

Stable Value Funds: The investor should note that these funds invest in short to intermediate term securities that can and may lose value. These funds, while managed to protect principal, do not guarantee the investor's principal, nor are they insured or guaranteed by the FDIC or any other government agency.

Money Market Funds: The investor should note that these funds invest in short term securities that can and may lose value. These funds, while managed to protect principal, do not guarantee the investor's principal, nor are they insured or guaranteed by the FDIC or any other government agency.

Guaranteed Investment Contract (GIC): Contract that guarantees the repayment of principal and a fixed or floating rate over a specified period of time. The guarantee is backed by the provider, typically an insurance company.

2021 STRATEGIC PARTNERSHIP PLAN

San Mateo County Deferred Compensation Plan

Current Period: July 1, 2021 – September 30, 2021

Prior Period: April 1, 2021 – June 30, 2021

Effective on the closing date of the transaction, Empower Retirement (Empower) acquired the Massachusetts Mutual Life Insurance Company's (MassMutual) retirement business. Through this transaction, business written by MassMutual is reinsured by Great-West Life & Annuity Insurance Company (GWLA) and in New York by GreatWest Life & Annuity Insurance Company of New York. Concurrently, MassMutual retroceded business it reinsures from a cedent, which MassMutual assumed in a previous transaction. On the closing date of the transaction, Empower will administer the business on MassMutual's behalf, with certain administrative services being performed by MassMutual and its affiliates during a temporary transition period. Additionally, GWFS Equities, Inc. will be the distributor of the MassMutual Insurance products sold on Empower's platform. Empower Retirement refers to the products and services offered by GWLA and its subsidiaries. GWFS Equities is a subsidiary of GWLA and an affiliate of Empower Retirement, LLC; Great-West Funds, Inc.; and registered investment advisers Advised Assets Group, LLC and Personal Capital. Empower is not affiliated with MassMutual or its affiliates.

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Executive Summary

61869-1-San Mateo County Deferred Compensation Plan

Plan Statistics

	6/30/2021	9/30/2021	Plan Trend	
Total plan assets	\$665,545,059	\$666,462,416	▲	0%
Total outstanding loan balances	\$7,121,407	\$7,252,547	▲	2%
Participant contributions				
Participant	\$10,883,246	\$11,074,507	▲	2%
EE Pre-Tax	\$8,284,598	\$8,360,172		
Roth	\$1,772,728	\$2,026,614		
Loan Repayment	\$825,920	\$687,721		
Rollover	\$775,099	\$1,099,672	▲	42%
Transferred assets	\$13,962	\$22,075	▲	58%
Distributions				
Withdrawals	(\$1,069,452)	(\$979,544)	▼	8%
Terminations	(\$8,030,766)	(\$6,227,338)	▼	22%
Loans	(\$875,530)	(\$829,750)	▼	5%
Expenses*	(\$96,968)	(\$97,112)	▲	0%
Investment income	\$30,639,071	(\$3,141,227)	▼	110%

Notes Terminations = termination and retirement

Withdrawals = in-service withdrawal, death benefits, minimum distribution, installment payment, loan default

Total plan assets exclude unallocated assets. The Contribution data displays the combined dollar value of Contributions & Loan Repayments, if applicable.

*The expenses shown reflect expenses deducted from plan assets. Expenses billed directly to the plan sponsor or expenses related to the expense ratio of investments under the plan are not reflected.

Executive Summary

61869-1-San Mateo County Deferred Compensation Plan

Participant Statistics

	6/30/2021	9/30/2021	Plan Trend
Total participants	9,409	9,521	▲ 1%
Participation Rate	96%	98%	▲ 2%
Average account balance	\$70,735	\$69,999	▼ 1%
Average number of investments	5.4	4.9	▼ 9%
Number of outstanding loans	604	618	▲ 2%
Percent of participants with a loan	6%	6%	◀ ▶ 0%
Average loan balance	\$11,790	\$11,736	▼ 0%
Total calls to 800#	156	154	▼ 1%
Total visits to website	16,073	14,095	▼ 12%
Mobile App Unique Users/Total Sessions	April - 239 / 1,354 May - 201 / 1,122 June - 213 / 1,088	July - 206 / 1,059 August - 205 / 1,103 September - 200 / 883	

Notes

2Q 2021 eligible - 5437 (does not include extra help) total # contributing - 5213 - 96%

3Q 2021 eligible - 5423 (does not include extra help) total # contributing - 5302 - 98%

The participation rate calculation is based upon eligible participants with a salary deferral contribution in the past 12 months / total eligible employees (active and eligible not participating). The contribution rate does not include flat dollar contributions.

457 Plan Balances by Investment

61869-1-San Mateo County Deferred Compensation Plan



The below shows the plan level activity for the current time period. The balances are based on all activity employed and terminated plan participants. The balances do not include any unallocated assets or outstanding loan amounts.

Investment Options	Balances as of 6/30/2021	Percentage*	Plan Activity July 01, 2021 through September 30, 2021					Investment Income	Balances as of 9/30/2021	Percentage*
			Contributions	Other Activity	Transfers	Distributions	Expenses**			
SAGIC Core Bond (61869)	\$148,421,465	22.30%	\$1,651,406	\$227,872	(\$147,091)	(\$3,225,601)	(\$21,397)	\$735,746	\$147,642,399	22.15%
PIMCO Long-Term Real Return Fund	\$4,577,164	0.69%	\$73,329	\$13,384	(\$7,833)	(\$21,045)	(\$708)	\$102,960	\$4,737,251	0.71%
PIMCO Total Return Fund	\$14,044,004	2.11%	\$141,923	\$14,594	(\$46,272)	(\$70,096)	(\$2,141)	\$42,681	\$14,124,693	2.12%
Vanguard Total Bond Mrkt Index Fund	\$8,798,587	1.32%	\$147,628	\$16,812	\$41,765	(\$78,076)	(\$1,478)	\$10,147	\$8,935,385	1.34%
MassMutual High Yield Fund	\$1,089,676	0.16%	\$15,357	\$2,181	(\$8,704)	(\$42,318)	(\$198)	\$11,988	\$1,067,981	0.16%
Vanguard Instl Target Ret 2015	\$11,721,073	1.76%	\$130,239	\$5,358	(\$20,146)	(\$266,049)	(\$1,705)	(\$17,332)	\$11,551,438	1.73%
Vanguard Instl Target Ret 2020	\$107,532	0.02%	\$139,959	\$1,005	\$233,500	(\$13,219)	(\$44)	(\$4,789)	\$463,944	0.07%
Vanguard Instl Target Ret 2025	\$44,614,383	6.70%	\$788,711	\$45,912	(\$412,629)	(\$172,572)	(\$6,176)	(\$276,185)	\$44,581,443	6.69%
Vanguard Instl Target Ret 2030	\$364,664	0.05%	\$319,707	\$3,079	\$370,956	(\$8,692)	(\$152)	(\$12,732)	\$1,036,830	0.16%
Vanguard Instl Target Ret 2035	\$40,618,404	6.10%	\$1,134,720	\$77,174	(\$84,324)	(\$372,200)	(\$6,010)	(\$360,798)	\$41,006,968	6.15%
Vanguard Instl Target Ret 2040	\$222,547	0.03%	\$338,408	\$7,091	\$142,715	(\$8,381)	(\$87)	(\$11,461)	\$690,832	0.10%
Vanguard Instl Target Ret 2045	\$36,537,330	5.49%	\$1,111,199	\$47,518	\$74,101	(\$436,661)	(\$5,541)	(\$404,465)	\$36,923,482	5.54%
Vanguard Instl Target Ret 2050	\$350,243	0.05%	\$499,046	\$2,396	\$138,556	(\$3,983)	(\$90)	(\$20,046)	\$966,120	0.14%
Vanguard Instl Target Ret 2055	\$25,502,205	3.83%	\$1,152,497	\$36,153	(\$77,957)	(\$159,869)	(\$3,820)	(\$295,656)	\$26,153,552	3.92%
Vanguard Instl Target Ret 2060	\$433,399	0.07%	\$294,219	\$999	\$1,039	(\$5,919)	(\$79)	(\$11,361)	\$712,297	0.11%
Vanguard Instl Target Ret Inc Fd	\$8,636,683	1.30%	\$35,016	\$3,145	(\$238,241)	(\$71,556)	(\$1,186)	(\$3,864)	\$8,359,997	1.25%
Vanguard Instl Trgt Ret 2065 Fd	\$16,497	0.00%	\$21,801	\$0	\$3,526	(\$773)	(\$3)	(\$780)	\$40,268	0.01%
American Funds American Mutual Fund	\$21,391,921	3.21%	\$211,589	\$31,150	(\$284,464)	(\$206,324)	(\$3,030)	(\$58,759)	\$21,082,083	3.16%
American Funds Fndmntl Invstrs Fnd	\$53,630,494	8.06%	\$270,122	\$26,817	(\$350,175)	(\$390,958)	(\$7,592)	(\$585,320)	\$52,593,388	7.89%

*Due to rounding, percentages may not total 100 percent.

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457 Plan Balances by Investment

61869-1-San Mateo County Deferred Compensation Plan



The below shows the plan level activity for the current time period. The balances are based on all activity employed and terminated plan participants. The balances do not include any unallocated assets or outstanding loan amounts.

Investment Options	Balances as of 6/30/2021	Percentage*	Plan Activity July 01, 2021 through September 30, 2021					Investment Income	Balances as of 9/30/2021	Percentage*
			Contributions	Other Activity	Transfers	Distributions	Expenses**			
Parnassus Core Equity Fund	\$8,651,989	1.30%	\$145,482	\$10,357	(\$97,097)	(\$80,164)	(\$1,284)	\$16,539	\$8,645,822	1.30%
Vanguard Institutional Index Fund	\$32,177,027	4.83%	\$396,079	\$13,790	\$238,279	(\$454,270)	(\$4,705)	\$196,229	\$32,562,428	4.89%
Vanguard Total Stock Mkt Index Fd	\$22,340,692	3.36%	\$458,263	\$26,618	\$1,161,863	(\$148,923)	(\$3,593)	(\$56,489)	\$23,778,430	3.57%
American Funds Grth Fund of America	\$54,365,140	8.17%	\$405,109	\$22,272	(\$1,028,346)	(\$726,024)	(\$7,729)	\$591,294	\$53,621,717	8.05%
American Century Mid Cap Value Func	\$6,051,604	0.91%	\$57,191	\$4,527	(\$46,018)	(\$102,888)	(\$904)	(\$33,868)	\$5,929,643	0.89%
Vanguard Mid Cap Index Fund	\$9,156,782	1.38%	\$140,724	\$11,051	\$654,311	(\$97,632)	(\$1,491)	(\$12,529)	\$9,851,215	1.48%
MassMutual Mid Cap Growth Fund	\$20,319,085	3.05%	\$147,630	\$13,175	(\$91,486)	(\$252,370)	(\$2,927)	\$107,777	\$20,240,883	3.04%
Small Cap Value CIT	\$1,195,919	0.18%	\$46,051	\$3,155	\$26,091	(\$8,707)	(\$244)	(\$13,371)	\$1,248,894	0.19%
Vanguard Small Cap Index Fund	\$14,828,730	2.23%	\$186,619	\$12,722	(\$3,465)	(\$71,358)	(\$2,148)	(\$392,169)	\$14,558,930	2.18%
Small Cap Growth CIT	\$11,088,808	1.67%	\$95,644	\$9,847	(\$282,719)	(\$47,551)	(\$1,488)	(\$1,161,936)	\$9,700,604	1.46%
American Fnds Cap Wld Gr and Inc Fd	\$13,187,335	1.98%	\$129,278	\$9,241	(\$56,028)	(\$145,691)	(\$2,054)	(\$278,793)	\$12,843,287	1.93%
Vanguard Developed Markets Index Fc	\$4,351,416	0.65%	\$105,660	\$10,399	\$63,201	(\$35,834)	(\$791)	(\$71,173)	\$4,422,878	0.66%
Amer Funds EuroPacific Growth Fund	\$12,025,589	1.81%	\$124,227	\$11,133	\$122,901	(\$118,117)	(\$1,845)	(\$284,844)	\$11,879,044	1.78%
Invesco Developing Markets Fund	\$4,253,834	0.64%	\$77,146	\$6,444	\$101,651	(\$11,391)	(\$812)	(\$396,770)	\$4,030,102	0.60%
Invesco Real Estate Fund	\$3,327,318	0.50%	\$66,339	\$5,297	\$137,298	(\$10,718)	(\$563)	\$17,409	\$3,542,381	0.53%
Bank of The West Savings	\$6,832,309	1.03%	\$245,204	\$11,512	(\$51,882)	(\$101,118)	(\$959)	\$8,351	\$6,943,417	1.04%
Hartford Healthcare HLS Fund	\$8,592,458	1.29%	\$79,670	\$7,315	(\$187,264)	(\$25,469)	(\$1,182)	(\$169,595)	\$8,295,934	1.24%
Schwab PCRA	\$5,301,576	0.80%	\$0	\$0	\$33,770	\$0	\$0	(\$118,798)	\$5,216,548	0.78%
Vanguard Utilities Index Fund	\$6,419,177	0.96%	\$52,419	\$5,227	(\$23,382)	(\$44,114)	(\$955)	\$71,535	\$6,479,908	0.97%

*Due to rounding, percentages may not total 100 percent.

**The expenses shown reflect expenses deducted from plan assets. Does not include expenses billed directly to the plan sponsor or expenses related to the expense ratio of investments under the plan.

457 Plan Balances by Investment

61869-1-San Mateo County Deferred Compensation Plan



The below shows the plan level activity for the current time period. The balances are based on all activity employed and terminated plan participants. The balances do not include any unallocated assets or outstanding loan amounts.

Investment Options	Balances as of 6/30/2021	Percentage*	Plan Activity July 01, 2021 through September 30, 2021					Investment Income	Balances as of 9/30/2021	Percentage*
			Contributions	Other Activity	Transfers	Distributions	Expenses**			
Total	\$665,545,058	100%	\$11,435,611	\$756,720	----	(\$8,036,632)	(\$97,112)	(\$3,141,227)	\$666,462,418	100%

*Due to rounding, percentages may not total 100 percent.

**The expenses shown reflect expenses deducted from plan assets. Does not include expenses billed directly to the plan sponsor or expenses related to the expense ratio of investments under the plan.

401(a) Plan Balances by Investment

61869-3-County of San Mateo 401(a) Retirement Plan



The below shows the plan level activity for the current time period. The balances are based on all activity employed and terminated plan participants. The balances do not include any unallocated assets or outstanding loan amounts.

Investment Options	Balances as of 6/30/2021	Percentage*	Plan Activity July 01, 2021 through September 30, 2021					Investment Income	Balances as of 9/30/2021	Percentage*
			Contributions	Other Activity	Transfers	Distributions	Expenses**			
SAGIC Core Bond (61869)	\$820,494	9.80%	\$7,650	\$0	(\$1,062)	(\$39,979)	(\$111)	\$3,986	\$790,976	9.16%
PIMCO Long-Term Real Return Fund	\$31,507	0.38%	\$595	\$0	(\$182)	(\$465)	(\$5)	\$710	\$32,160	0.37%
PIMCO Total Return Fund	\$19,727	0.24%	\$751	\$0	\$310	\$0	(\$4)	\$53	\$20,837	0.24%
Vanguard Total Bond Mrkt Index Fund	\$36,537	0.44%	\$2,178	\$0	\$305	\$0	(\$7)	\$20	\$39,032	0.45%
MassMutual High Yield Fund	\$7,431	0.09%	\$243	\$0	\$65	\$0	(\$1)	\$83	\$7,821	0.09%
Vanguard Instl Target Ret 2015	\$285,785	3.41%	\$1,922	\$0	\$0	\$0	(\$40)	(\$465)	\$287,203	3.32%
Vanguard Instl Target Ret 2020	\$42,508	0.51%	\$52,205	\$0	\$16,754	\$0	(\$10)	(\$1,133)	\$110,324	1.28%
Vanguard Instl Target Ret 2025	\$896,786	10.71%	\$20,455	\$0	(\$95,424)	\$0	(\$117)	(\$5,667)	\$816,034	9.45%
Vanguard Instl Target Ret 2030	\$31,392	0.37%	\$41,957	\$0	\$77,387	\$0	(\$14)	(\$675)	\$150,049	1.74%
Vanguard Instl Target Ret 2035	\$942,195	11.25%	\$33,443	(\$4,549)	\$0	(\$2,741)	(\$132)	(\$8,645)	\$959,570	11.11%
Vanguard Instl Target Ret 2040	\$31,574	0.38%	\$41,271	\$0	\$0	\$0	(\$7)	(\$1,180)	\$71,658	0.83%
Vanguard Instl Target Ret 2045	\$1,760,534	21.02%	\$67,273	(\$7,817)	\$23	(\$47,780)	(\$246)	(\$18,486)	\$1,753,500	20.30%
Vanguard Instl Target Ret 2050	\$52,893	0.63%	\$65,998	\$0	(\$3,365)	(\$793)	(\$11)	(\$1,982)	\$112,740	1.31%
Vanguard Instl Target Ret 2055	\$2,419,491	28.89%	\$70,715	(\$5,939)	(\$2,454)	(\$28,545)	(\$339)	(\$26,418)	\$2,426,511	28.09%
Vanguard Instl Target Ret 2060	\$24,240	0.29%	\$26,435	\$0	(\$1,028)	(\$1,032)	(\$5)	(\$751)	\$47,860	0.55%
Vanguard Instl Target Ret Inc Fd	\$12,648	0.15%	\$199	\$0	\$10	\$0	(\$2)	(\$14)	\$12,841	0.15%
Vanguard Instl Trgt Ret 2065 Fd	\$1,553	0.02%	\$1,838	\$0	\$1,607	\$0	(\$0)	(\$81)	\$4,916	0.06%
American Funds American Mutual Fund	\$28,943	0.35%	\$1,579	\$0	\$514	\$0	(\$5)	(\$120)	\$30,912	0.36%
American Funds Fndmntl Invstrs Fnd	\$24,408	0.29%	\$1,264	\$0	\$290	\$0	(\$4)	(\$307)	\$25,651	0.30%

*Due to rounding, percentages may not total 100 percent.

**The expenses shown reflect expenses deducted from plan assets. Does not include expenses billed directly to the plan sponsor or expenses related to the expense ratio of investments under the plan.

401(a) Plan Balances by Investment

61869-3-County of San Mateo 401(a) Retirement Plan



The below shows the plan level activity for the current time period. The balances are based on all activity employed and terminated plan participants. The balances do not include any unallocated assets or outstanding loan amounts.

Investment Options	Plan Activity July 01, 2021 through September 30, 2021									
	Balances as of 6/30/2021	Percentage*	Contributions	Other Activity	Transfers	Distributions	Expenses**	Investment Income	Balances as of 9/30/2021	Percentage*
Parnassus Core Equity Fund	\$55,460	0.66%	\$2,420	\$0	(\$603)	\$0	(\$8)	\$78	\$57,347	0.66%
Vanguard Institutional Index Fund	\$164,634	1.97%	\$14,373	\$0	\$1,252	(\$4,810)	(\$24)	\$801	\$176,226	2.04%
Vanguard Total Stock Mkt Index Fd	\$144,896	1.73%	\$10,545	\$0	\$1,753	(\$11,062)	(\$62)	\$129	\$146,199	1.69%
American Funds Grth Fund of America	\$88,206	1.05%	\$4,087	\$0	(\$375)	(\$301)	(\$13)	\$903	\$92,507	1.07%
American Century Mid Cap Value Func	\$6,830	0.08%	\$378	\$0	\$166	\$0	(\$1)	(\$48)	\$7,325	0.08%
Vanguard Mid Cap Index Fund	\$67,304	0.80%	\$3,313	\$0	(\$66)	\$0	(\$10)	(\$37)	\$70,503	0.82%
MassMutual Mid Cap Growth Fund	\$33,882	0.40%	\$1,897	\$0	(\$65)	\$0	(\$5)	\$136	\$35,845	0.41%
Small Cap Value CIT	\$16,337	0.20%	\$1,607	\$0	\$515	\$0	(\$3)	(\$181)	\$18,276	0.21%
Vanguard Small Cap Index Fund	\$104,977	1.25%	\$3,083	\$0	\$1,843	\$0	(\$15)	(\$2,814)	\$107,074	1.24%
Small Cap Growth CIT	\$15,877	0.19%	\$593	\$0	\$432	(\$5,503)	(\$2)	(\$1,382)	\$10,014	0.12%
American Fnds Cap Wld Gr and Inc Fd	\$16,255	0.19%	\$719	\$0	\$233	\$0	(\$3)	(\$371)	\$16,833	0.19%
Vanguard Developed Markets Index Fc	\$49,138	0.59%	\$4,336	\$0	\$662	\$0	(\$8)	(\$893)	\$53,235	0.62%
Amer Funds EuroPacific Growth Fund	\$21,377	0.26%	\$646	\$0	\$61	\$0	(\$4)	(\$520)	\$21,561	0.25%
Invesco Developing Markets Fund	\$35,090	0.42%	\$1,618	\$0	\$955	\$0	(\$6)	(\$3,307)	\$34,350	0.40%
Invesco Real Estate Fund	\$48,412	0.58%	\$6,638	\$0	(\$486)	\$0	(\$7)	\$294	\$54,851	0.63%
Bank of The West Savings	\$15,783	0.19%	\$0	\$0	\$0	\$0	(\$2)	\$19	\$15,800	0.18%
Hartford Healthcare HLS Fund	\$17,435	0.21%	\$623	\$0	(\$26)	(\$275)	(\$2)	(\$355)	\$17,401	0.20%
Vanguard Utilities Index Fund	\$2,297	0.03%	\$195	\$0	\$0	\$0	(\$0)	\$17	\$2,509	0.03%
Total	\$8,374,837	100%	\$495,042	(\$18,305)	---	(\$143,286)	(\$1,238)	(\$68,603)	\$8,638,449	100%

*Due to rounding, percentages may not total 100 percent.

**The expenses shown reflect expenses deducted from plan assets. Does not include expenses billed directly to the plan sponsor or expenses related to the expense ratio of investments under the plan.

OBRA Plan Balances by Investment



The below shows the plan level activity for the current time period. The balances are based on all activity employed and terminated plan participants. The balances do not include any unallocated assets or outstanding loan amounts.

Plan Activity July 01, 2021 through September 30, 2021

Investment Options	Balances as of 6/30/2021	Percentage*	Plan Activity July 01, 2021 through September 30, 2021				Investment Income	Balances as of 9/30/2021	Percentage*
			Contributions	Transfers	Distributions	Expenses**			
457 OBRA									
SAGIC (61869OB)	\$12,942,003	100.00%	\$872,104	\$0	(\$302,160)	(\$1,928)	\$24,980	\$13,534,999	100.00%
Total	\$12,942,003	100%	\$872,104	----	(\$302,160)	(\$1,928)	\$24,980	\$13,534,999	100%

Plan Activity July 01, 2021 through September 30, 2021

Investment Options	Balances as of 6/30/2021	Percentage*	Plan Activity July 01, 2021 through September 30, 2021				Investment Income	Balances as of 9/30/2021	Percentage*
			Contributions	Transfers	Distributions	Expenses**			
402(a) OBRA									
SAGIC (61869OB)	\$10,868,227	100.00%	\$0	\$0	(\$151,833)	(\$1,487)	\$20,339	\$10,735,246	100.00%
Total	\$10,868,227	100%	\$0	----	(\$151,833)	(\$1,487)	\$20,339	\$10,735,246	100%

*Due to rounding, percentages may not total 100 percent.

**The expenses shown reflect expenses deducted from plan assets. Does not include expenses billed directly to the plan sponsor or expenses related to the expense ratio of investments under the plan.

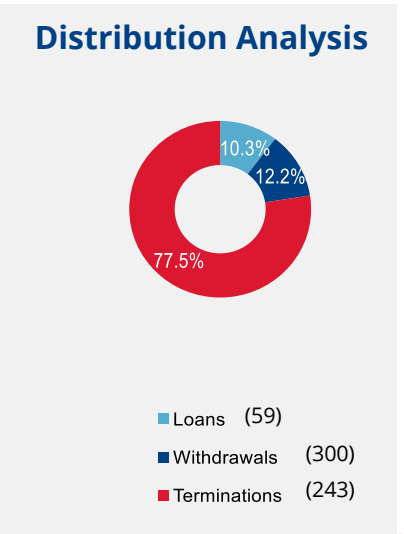
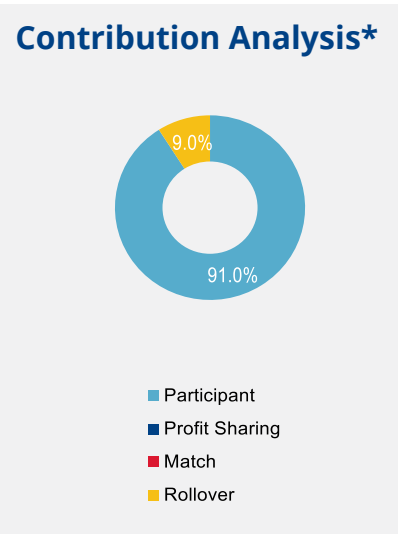
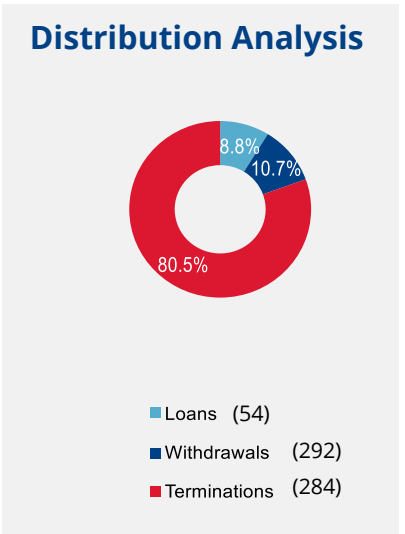
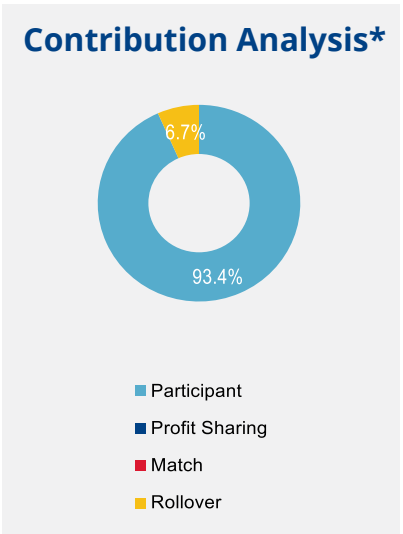
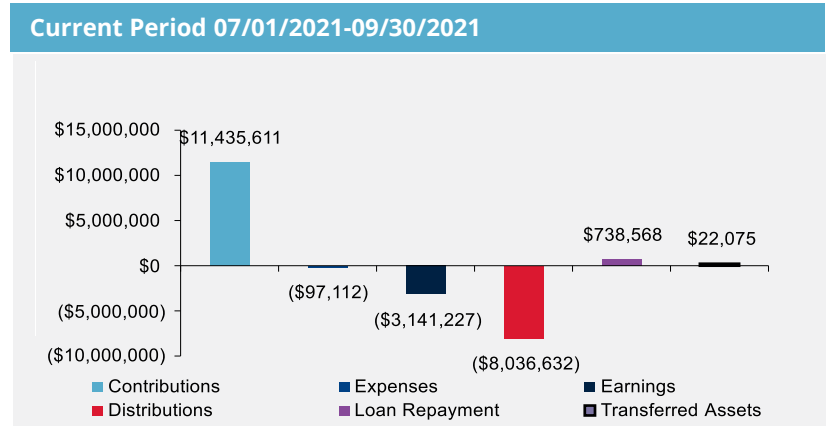
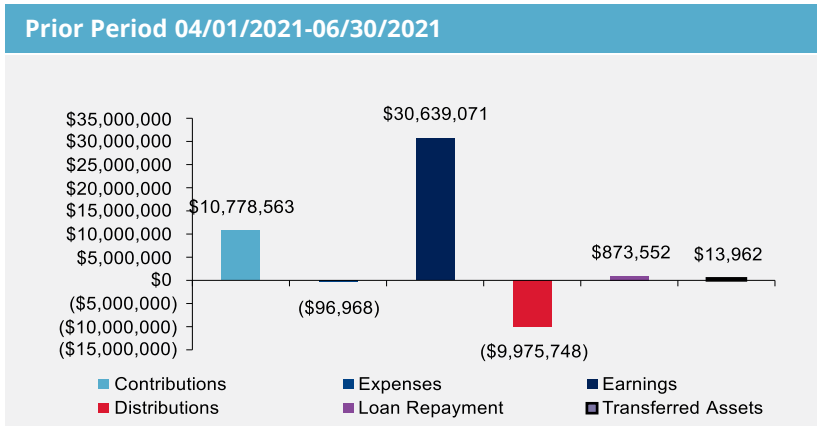
Cash Flow Analysis

61869-1-San Mateo County Deferred Compensation Plan



Cash flow

Cash flow includes all inflows and outflows of dollars from the plan by active and terminated employees as applicable and the impact of cash flow on participant balances.



*The Contribution Analysis Pie Charts display the percentage of the combined dollar value of the Contributions & Loan Repayments
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Total Investment Balance

61869-3-County of San Mateo 401(a) Retirement Plan



The below shows the plan level activity for the current time period. The balances are based on all activity employed and terminated plan participants. The balances do not include any unallocated assets or outstanding loan amounts.

Investment Options	Plan Activity July 01, 2021 through September 30, 2021									
	Balances as of 6/30/2021	Percentage*	Contributions	Other Activity	Transfers	Distributions	Expenses**	Investment Income	Balances as of 9/30/2021	Percentage*
Parnassus Core Equity Fund	\$55,460	0.66%	\$2,420	\$0	(\$603)	\$0	(\$8)	\$78	\$57,347	0.66%
Vanguard Institutional Index Fund	\$164,634	1.97%	\$14,373	\$0	\$1,252	(\$4,810)	(\$24)	\$801	\$176,226	2.04%
Vanguard Total Stock Mkt Index Fd	\$144,896	1.73%	\$10,545	\$0	\$1,753	(\$11,062)	(\$62)	\$129	\$146,199	1.69%
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American Century Mid Cap Value Func	\$6,830	0.08%	\$378	\$0	\$166	\$0	(\$1)	(\$48)	\$7,325	0.08%
Vanguard Mid Cap Index Fund	\$67,304	0.80%	\$3,313	\$0	(\$66)	\$0	(\$10)	(\$37)	\$70,503	0.82%
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Small Cap Value CIT	\$16,337	0.20%	\$1,607	\$0	\$515	\$0	(\$3)	(\$181)	\$18,276	0.21%
Vanguard Small Cap Index Fund	\$104,977	1.25%	\$3,083	\$0	\$1,843	\$0	(\$15)	(\$2,814)	\$107,074	1.24%
Small Cap Growth CIT	\$15,877	0.19%	\$593	\$0	\$432	(\$5,503)	(\$2)	(\$1,382)	\$10,014	0.12%
American Fnds Cap Wld Gr and Inc Fd	\$16,255	0.19%	\$719	\$0	\$233	\$0	(\$3)	(\$371)	\$16,833	0.19%
Vanguard Developed Markets Index Fc	\$49,138	0.59%	\$4,336	\$0	\$662	\$0	(\$8)	(\$893)	\$53,235	0.62%
Amer Funds EuroPacific Growth Fund	\$21,377	0.26%	\$646	\$0	\$61	\$0	(\$4)	(\$520)	\$21,561	0.25%
Invesco Developing Markets Fund	\$35,090	0.42%	\$1,618	\$0	\$955	\$0	(\$6)	(\$3,307)	\$34,350	0.40%
Invesco Real Estate Fund	\$48,412	0.58%	\$6,638	\$0	(\$486)	\$0	(\$7)	\$294	\$54,851	0.63%
Bank of The West Savings	\$15,783	0.19%	\$0	\$0	\$0	\$0	(\$2)	\$19	\$15,800	0.18%
Hartford Healthcare HLS Fund	\$17,435	0.21%	\$623	\$0	(\$26)	(\$275)	(\$2)	(\$355)	\$17,401	0.20%
Vanguard Utilities Index Fund	\$2,297	0.03%	\$195	\$0	\$0	\$0	(\$0)	\$17	\$2,509	0.03%
Total	\$8,374,837	100%	\$495,042	(\$18,305)	---	(\$143,286)	(\$1,238)	(\$68,603)	\$8,638,449	100%

*Due to rounding, percentages may not total 100 percent.

**The expenses shown reflect expenses deducted from plan assets. Does not include expenses billed directly to the plan sponsor or expenses related to the expense ratio of investments under the plan.

Total Investment Balance

61869-1-San Mateo County Deferred Compensation Plan



The balances reflected are based on plan participant status. The participant balances do not include any outstanding loan amounts. The investment selection percentage reflect participants with an active status. Due to rounding the percentage may not total 100%

Investment Options	PARTICIPANTS					Participants in Option as of 06/30/2021	Participants in Option as of 09/30/2021	Investment Selection
	Active	Beneficiary	Retired	Terminated	QDRO			
SAGIC Core Bond (61869)	\$51,842,278	\$1,605,579	\$15,391,310	\$78,346,411	\$456,820	2,424	2,399	6.9%
PIMCO Long-Term Real Return Fund	\$2,736,590	\$6,500	\$52,821	\$1,934,689	\$6,652	453	467	0.4%
PIMCO Total Return Fund	\$6,587,504	\$118,036	\$1,021,317	\$6,363,647	\$34,190	872	876	0.8%
Vanguard Total Bond Mrkt Index Fund	\$5,402,415	\$0	\$458,081	\$3,060,804	\$14,086	530	547	0.6%
MassMutual High Yield Fund	\$616,383	\$0	\$886	\$450,712	\$0	156	170	0.1%
Vanguard Instl Target Ret 2015	\$4,655,419	\$33,080	\$2,181,588	\$4,672,229	\$9,122	364	358	1.3%
Vanguard Instl Target Ret 2020	\$233,228	\$0	\$233	\$230,483	\$0	75	84	1.7%
Vanguard Instl Target Ret 2025	\$29,541,361	\$94,580	\$820,880	\$14,094,376	\$30,246	1,059	1,050	5.9%
Vanguard Instl Target Ret 2030	\$1,030,088	\$0	\$0	\$6,742	\$0	170	195	3.6%
Vanguard Instl Target Ret 2035	\$33,125,900	\$12,889	\$88,769	\$7,739,295	\$40,114	1,398	1,404	10.2%
Vanguard Instl Target Ret 2040	\$679,936	\$0	\$0	\$10,896	\$0	256	272	4.7%
Vanguard Instl Target Ret 2045	\$32,140,281	\$27,870	\$8,361	\$4,720,636	\$26,335	1,658	1,657	12.3%
Vanguard Instl Target Ret 2050	\$963,444	\$0	\$0	\$2,676	\$0	391	425	7.8%
Vanguard Instl Target Ret 2055	\$22,764,520	\$40,915	\$55,667	\$3,292,451	\$0	2,351	2,372	14.2%
Vanguard Instl Target Ret 2060	\$512,210	\$0	\$182,233	\$17,853	\$0	321	374	8.2%
Vanguard Instl Target Ret Inc Fd	\$1,219,280	\$646,288	\$2,678,381	\$3,814,699	\$1,349	478	469	0.6%
Vanguard Instl Trgt Ret 2065 Fd	\$40,268	\$0	\$0	\$0	\$0	133	157	4.5%
American Funds American Mutual Fund	\$12,324,138	\$159,802	\$938,275	\$7,610,374	\$49,493	1,015	1,025	1.1%
American Funds Fndmntl Invstrs Fnd	\$24,224,226	\$652,017	\$5,039,141	\$22,592,008	\$85,997	1,360	1,370	1.7%

Total Participants 9521: 6646 Active, 44 Beneficiary, 248 Retired, 2565 Terminated, 18 QDRO

Contracts with multiple plans may result in participants maintaining balances in more than one plan.

Total Investment Balance

61869-1-San Mateo County Deferred Compensation Plan



The balances reflected are based on plan participant status. The participant balances do not include any outstanding loan amounts. The investment selection percentage reflect participants with an active status. Due to rounding the percentage may not total 100%

Investment Options	PARTICIPANTS					Participants in Option as of 06/30/2021	Participants in Option as of 09/30/2021	Investment Selection
	Active	Beneficiary	Retired	Terminated	QDRO			
Parnassus Core Equity Fund	\$5,638,794	\$0	\$575,849	\$2,431,179	\$0	665	683	0.7%
Vanguard Institutional Index Fund	\$19,235,544	\$583,535	\$1,881,865	\$10,843,363	\$18,122	918	947	1.7%
Vanguard Total Stock Mkt Index Fd	\$18,545,292	\$78,399	\$500,226	\$4,654,513	\$0	790	836	1.9%
American Funds Grth Fund of America	\$28,417,328	\$491,574	\$4,375,241	\$20,183,293	\$154,282	1,346	1,345	2.1%
American Century Mid Cap Value Fund	\$3,454,938	\$15,116	\$86,303	\$2,372,016	\$1,271	649	661	0.3%
Vanguard Mid Cap Index Fund	\$6,352,204	\$91,971	\$622,007	\$2,783,343	\$1,689	708	735	0.7%
MassMutual Mid Cap Growth Fund	\$10,991,276	\$74,036	\$1,407,515	\$7,695,656	\$72,400	1,013	1,027	0.9%
Small Cap Value CIT	\$956,447	\$0	\$13,919	\$278,527	\$0	444	468	0.2%
Vanguard Small Cap Index Fund	\$8,722,338	\$73,600	\$624,718	\$5,128,975	\$9,300	925	948	0.9%
Small Cap Growth CIT	\$6,231,785	\$49,442	\$202,967	\$3,177,585	\$38,825	950	949	0.6%
American Fnds Cap Wid Gr and Inc Fd	\$7,898,097	\$66,376	\$468,898	\$4,389,754	\$20,162	864	875	0.6%
Vanguard Developed Markets Index Fd	\$3,274,039	\$0	\$99,252	\$1,046,810	\$2,777	539	560	0.6%
Amer Funds EuroPacific Growth Fund	\$7,102,538	\$12,668	\$474,160	\$4,260,928	\$28,749	858	871	0.6%
Invesco Developing Markets Fund	\$2,755,637	\$448	\$95,823	\$1,172,401	\$5,794	651	668	0.4%
Invesco Real Estate Fund	\$2,199,377	\$794	\$142,787	\$1,190,179	\$9,244	653	676	0.4%
Bank of The West Savings	\$3,744,525	\$0	\$947,236	\$2,251,656	\$0	247	244	0.4%
Hartford Healthcare HLS Fund	\$4,642,063	\$20,776	\$350,521	\$3,281,553	\$1,021	398	400	0.4%
Schwab PCRA	\$1,779,603	\$0	\$525,498	\$2,911,447	\$0	59	57	
Vanguard Utilities Index Fund	\$3,248,880	\$2,999	\$532,549	\$2,692,823	\$2,657	377	383	0.4%

Contracts with multiple plans may results in participants maintaining balances in more than one plan.

Total Investment Balance

61869-1-San Mateo County Deferred Compensation Plan



The balances reflected are based on plan participant status. The participant balances do not include any outstanding loan amounts. The investment selection percentage reflect participants with an active status. Due to rounding the percentage may not total 100%

Investment Options	PARTICIPANTS					Participants in Option as of 06/30/2021	Participants in Option as of 09/30/2021	Investment Selection
	Active	Beneficiary	Retired	Terminated	QDRO			
Total	\$375,830,172	\$4,959,289	\$42,845,278	\$241,706,985	\$1,120,695	-----	-----	100%

Contracts with multiple plans may results in participants maintaining balances in more than one plan.

Participant average balances

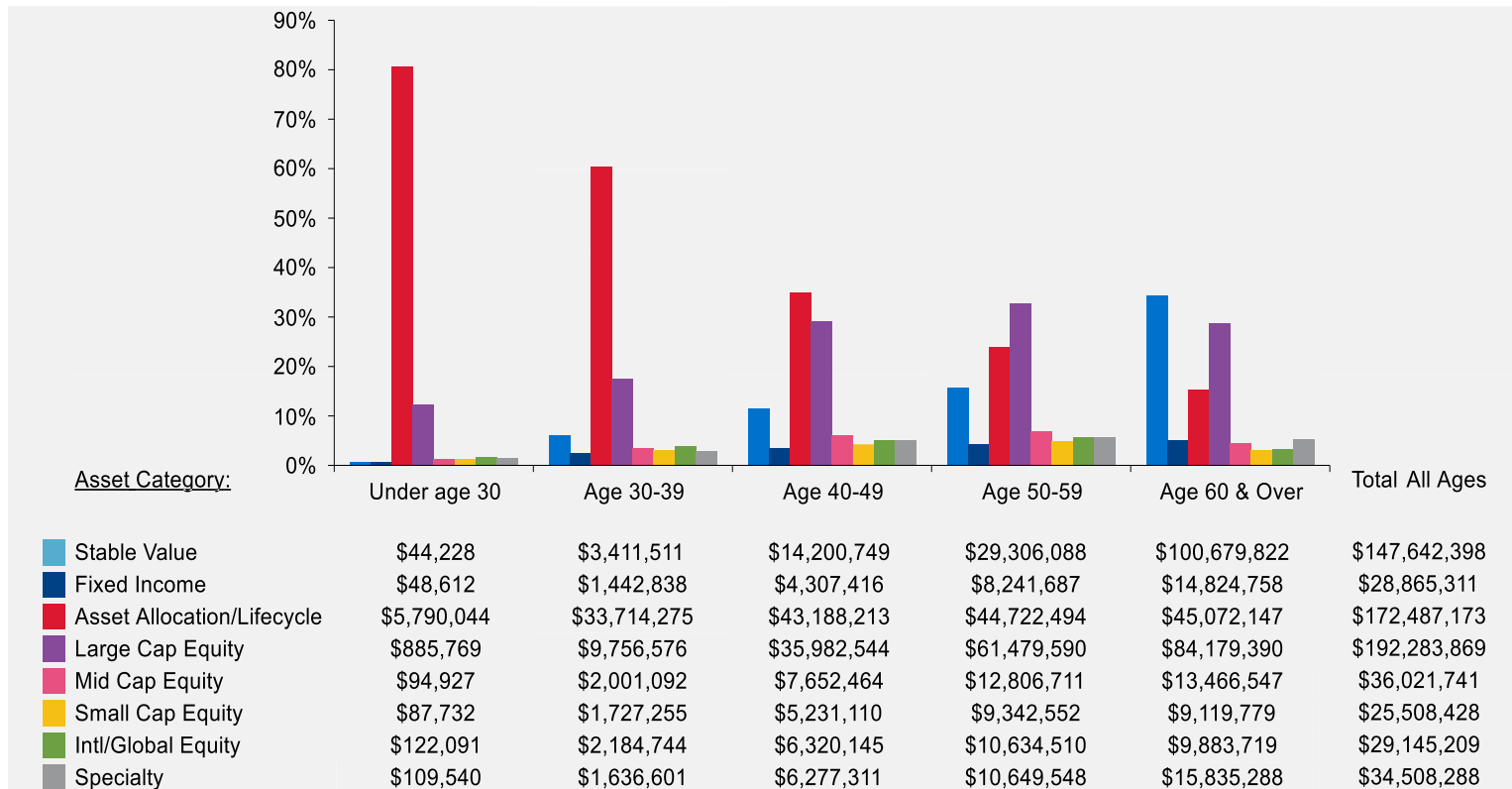
61869-1-San Mateo County Deferred Compensation Plan



Average account balance

The average participant account balance is based on the balance of all actively employed and terminated plan participants at the end of the period. The balances do not include any outstanding loan amounts.

Age	Under age 30	Age 30-39	Age 40-49	Age 50-59	Age 60 and Over	Total
Number of Participants	1,232	2,259	2,053	1,952	2,025	9,521
Group Balance	\$7,182,943	\$55,874,893	\$123,159,952	\$187,183,178	\$293,061,451	\$666,462,417
Average Account Balance	\$5,830	\$24,734	\$59,990	\$95,893	\$144,722	\$69,999

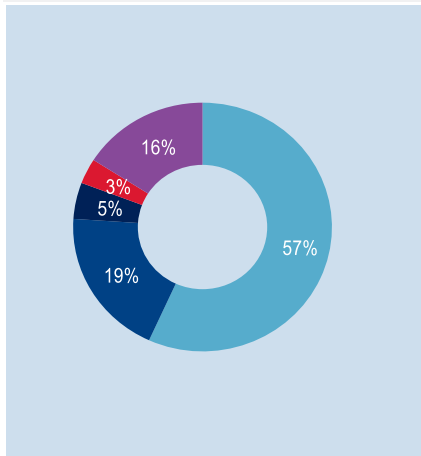


Asset Allocation

61869-1-San Mateo County Deferred Compensation Plan

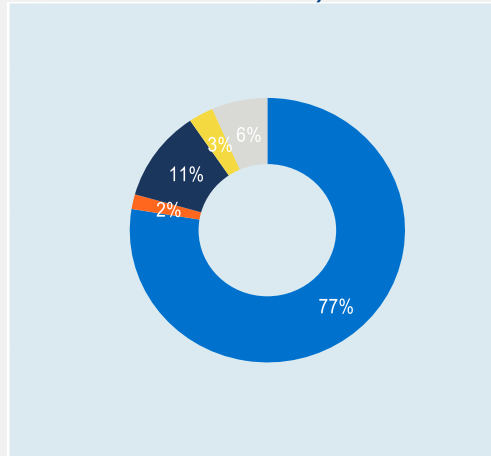
	9/30/2019	9/30/2020	09/30/2021	Industry Average *
Average number of options	5.2	5.4	4.9	5.5
Number of participants in one option (includes asset allocation investments)	5653	6008	5407	N/A

Number of options held by participants



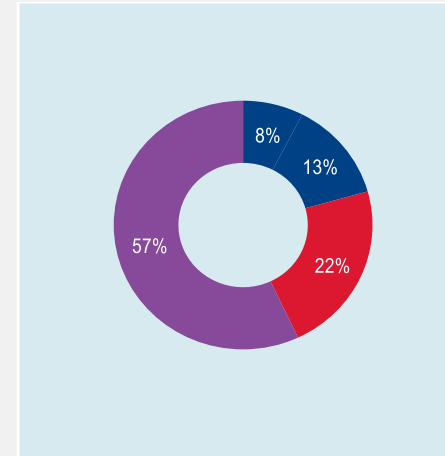
- 1
- 2
- 3
- 4
- 5+

Percentage of participants in one option by asset category group (excludes asset allocation/target date investments)



- Stable Value
- Large Cap Equity
- Small Cap Equity
- Specialty
- Fixed Income
- Mid Cap Equity
- Intl/Global Equity

Percentage of participants in one option in most utilized asset category group by age



- Under Age 30
- Age 30 - 39
- Age 40 - 49
- Age 50 - 59
- Age 60 and over

*Source: Hewitt Associates 2016 Universe Benchmarks Report

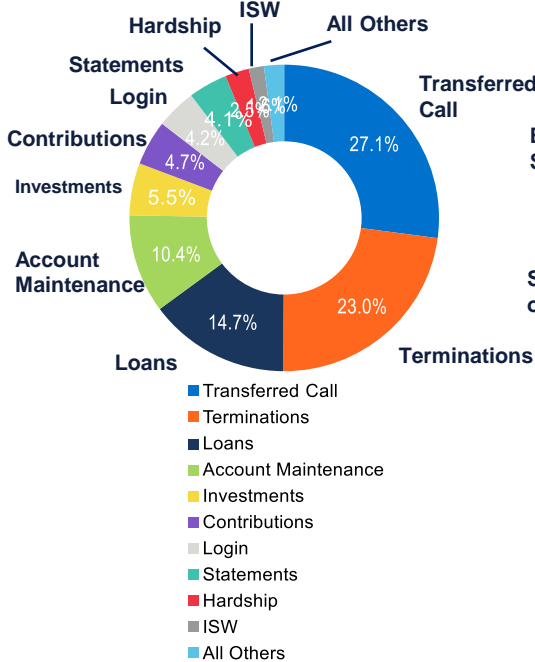
Participant Interactions

07/01/2021 through 09/30/2021

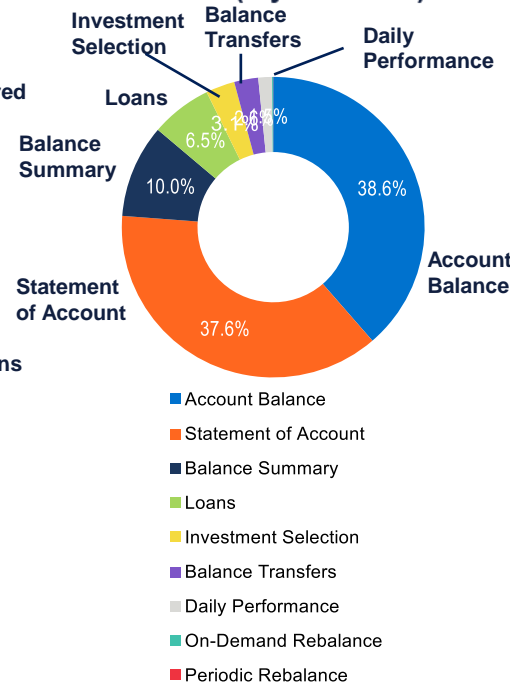
Total Visits

Toll Free 800#	154
Call Center	1,217
Website	14,095

Toll Free 800#



Website (My Account)



Highlights - Retirement Services Call Center

Transferred Call	206
RSG-Retirement Options	180
Loans	120
Investments	47
Contributions	40

Loans

61869-1-San Mateo County Deferred Compensation Plan



Account reduction loans

The loan information represents all outstanding loans for actively employed and terminated employees. Outstanding loan amounts include new loans issued for the given time period. Loans that have been categorized as a distribution are not included.

	Your Plan 06/30/2021	Your Plan 09/30/2021	All industries average
Number of loans allowed	1	1	1.0*
Average number of loans per participant with loans	1	1	Not available
Percentage of participants with loans	6.2%	6.3%	23.2%*
Average loan balance	\$11,790	\$11,736	\$10,642*
Percentage of plan assets loaned	1.1%	1.1%	1.8%*
	Your Plan 06/30/2021	Your Plan 09/30/2021	
Total number of participants with loans	581	596	
Total number of outstanding loans	604	618	
Average account balance of participants with loan	\$82,774	\$80,152	
Total value of outstanding loans	\$7,121,407	\$7,252,547	

Current Loan Interest Rate = 4.25%

*Source: PSCA's 62nd Annual Survey of PS and 401(k) Plans

Miscellaneous Statistics

Activity	Total #	Total \$
Total 3Q TRAK Calculation	43	N/A
Managed Accounts added in 3Q 2021	13	\$1,326,981.81
Total Managed Accounts	72	\$7,672,047.68
3Q Hardships Processed	2	\$5125.17
Rollovers In	20	\$1,041,570.75
Purchase of Service Credit to SamCera	12	\$119,931.59
Rollovers Out	73	\$4,516,712.85
QDRO	1	\$500
401(a) Forfeiture Balance as of 9/30/2021	269	\$556,587.71

Q3 2021 Educational Meeting Results



Date	Location	Group Meeting Attendees	Individual One-on-one Session Attendees	Participant Action					
				Sign-up	Save More	Asset Allocation	Consolidate	TRAK	MMR
7/1	Teams	1	2		2	1	1	2	2
7/2	Teams		2		2	2		1	1
7/6	NEBO	40	3	22	3	2	1	1	2
7/8	SamCERA	90		2	14	32	4		
7/12	Teams	21	3	2	3	2	3	1	2
7/13	LMS/Teams	4	2	1	4	3	2	2	2
7/14	Wellness	2	4	1	4	3	2	2	2
7/15	Wellness	6			3	4	3		6
7/19	NEBO	35		16	5	4	4		
7/19	Wellness	2	1		1	2	1	2	2
7/20	Wellness	6	1		1	1		1	1
7/21	LMS/Teams	3	3	2	3	4	2	1	3
7/22	LMS/Teams	34	3	4		1	3		2
7/23	Teams		6		4	4	2	2	4
7/26	LMS/Teams	8	6	1	3	5	2	1	8
7/27	LMS/Teams	5	3		2	3	1	2	3
7/28	LMS/Teams	4	1		4	5	3	1	1
7/29	LMS/Teams	10			3	4	4		
17		271	39	51	61	82	38	17	39

Q3 2021 Educational Meeting Results



Date	Location	Group Meeting Attendees	Individual One-on-one Session Attendees	Participant Action					
				Sign-up	Save More	Asset Allocation	Consolidate	TRAK	MMR
8/2	NEBO	28							
8/16	NEBO	24							
8/24	Teams		4	1	3	2	3	1	2
8/25	LMS/Teams	15	1		1	1		2	2
8/26	Teams		1						
8/27	Teams		2						
8/30	NEBO	36	3	16	8		6	2	3
8/30	LMS/Teams	4	3		3	2	3	1	4
7		107	14	17	15	5	12	6	11

Q3 2021 Educational Meeting Results



Date	Location	Group Meeting Attendees	Individual One-on-one Session Attendees	Participant Action					
				Sign-up	Save More	Asset Allocation	Consolidate	TRAK	MMR
9/1	Teams		1						
9/2	LMS/Teams	8	2		4	2	2		3
9/8	Teams		4		4	5	5	3	2
9/13	NEBO	19						3	
9/14	LMS/Teams	7	3		1			1	
9/15	LMS/Teams	6	1	1	4	3	2		7
9/16	Teams		1		1	1		1	1
9/17	Teams		2	1	2	3	1	3	3
9/20	Teams		1		1	1		1	
9/21	LMS/Teams	9	3	3	6	5	2	3	9
9/22	LMS/Teams	4	2	2					
9/23	LMS/Teams	1	3		2	3	1	2	1
9/27	NEBO	18		12	4	5	3		
9/28	LMS/Teams	8	2		1	1	1	2	2
9/29	LMS/Teams	7	1		1			1	1
15		87	26	19	31	29	17	20	29

Q3 2021 Educational Meeting Results



Date	# of Days	Group Meeting Attendees	Individual One-on-one Session Attendees	Participant Action					
				Sign-up	Save More	Asset Allocation	Consolidate	TRAK	MMR
JUL	17	271	39	51	61	82	38	17	39
AUG	7	107	14	17	15	5	12	6	11
SEP	15	87	26	19	31	29	17	20	29
Total	39	465	79	87	107	116	67	43	79

Additional Special Services

Pre-Retirement Eligibility Reports	35
Pre-Retirement Eligibility Use	25*
Service Credit Purchases:	138*

* Based on reports from County Benefits and SamCERA, may not match transactional data

Fiscal Year 2021 Educational Meeting Results

EDUCATION



Date	# of Days	Group Meeting Attendees	One-on-one Session Attendees	Participant Action					
				Sign-up	Save More	Asset Allocation	Consol.	TRAK	MMR
OCT	14	84	37	22	37	45	7	3	73
NOV	13	88	24	19	31	51	16	9	71
DEC	13	120	16	17	33	47	17	11	13
JAN	12	33	17	22	11	13	6	9	5
FEB	10	13	26	13	10	17	13	23	10
MAR	15	162	47	49	49	69	32	37	62
APR	18	146	38	35	57	61	29	23	114
MAY	10	27	18	21	14	13	3	14	27
JUN	12	40	17	23	19	13	12	6	29
JUL	17	271	39	51	61	82	38	17	39
AUG	7	107	14	17	15	5	12	6	11
SEP	15	87	26	19	31	29	17	20	29
Total	156	1178	319	308	368	445	188	178	483

Fiscal Year 2021 Educational Meeting Results

EDUCATION



Additional Special Services	
Pre-Retirement Eligibility Reports	119
Pre-Retirement Eligibility Use	58*
Service Credit Purchases:	233*

* Based on reports from County Benefits and SamCERA, may not match transactional data



EMPOWER
RETIREMENT®

County of San Mateo Quarterly Contribution Report

Contract #	Calendar Year	Quarter	EE Pre-Tax	EE Roth	Total
61869-1	2021	3	\$8,360,172.49	\$2,026,613.54	\$10,386,786.03
61869-1	2021	2	\$8,284,598.00	\$1,772,728.35	\$10,057,326.35
61869-1	2021	1	\$7,611,326.91	\$1,749,303.80	\$9,360,630.71
61869-1	2020	4	\$7,201,592.79	\$1,581,629.26	\$8,783,222.05
61869-1	2020	3	\$7,514,493.87	\$1,670,142.79	\$9,184,636.66
61869-1	2020	2	\$7,097,890.84	\$1,480,832.91	\$8,578,723.75
61869-1	2020	1	\$8,253,915.74	\$1,765,037.38	\$10,020,264.11
61869-1	2019	4	\$5,872,601.95	\$1,190,537.43	\$7,063,139.38
61869-1	2019	3	\$7,033,269.71	\$1,424,921.77	\$8,458,191.48
61869-1	2019	2	\$6,771,702.24	\$1,248,882.22	\$8,020,584.46
61869-1	2019	1	\$7,562,049.16	\$1,442,926.53	\$9,004,975.69
61869-1	2018	4	\$5,523,800.28	\$992,490.95	\$6,516,291.23
61869-1	2018	3	\$6,725,469.48	\$1,150,112.39	\$7,875,581.87
61869-1	2018	2	\$6,600,516.54	\$1,000,384.62	\$7,600,901.16
61869-1	2018	1	\$7,038,132.82	\$1,178,579.41	\$8,216,712.23
61869-1	2017	4	\$5,275,596.83	\$845,837.78	\$6,121,434.61
61869-1	2017	3	\$6,134,167.32	\$978,802.21	\$7,112,969.53
61869-1	2017	2	\$5,717,738.53	\$857,348.96	\$6,575,087.49
61869-1	2017	1	\$6,237,144.14	\$974,332.43	\$7,211,476.57
61869-1	2016	4	\$4,690,748.46	\$672,966.46	\$5,363,714.92
61869-1	2016	3	\$5,414,639.16	\$735,646.32	\$6,150,285.48
61869-1	2016	2	\$5,837,856.22	\$738,468.22	\$6,576,324.44
150018 & 61869-1	2016	1	\$4,859,213.43	\$543,647.44	\$5,402,860.87
Totals:			\$151,618,636.91	\$28,022,173.17	\$179,642,121.07

San Mateo County Q3 2021 Rollover Out Report

Plan Number	Subscriber Number	Payee Name	Post Date	Payee Type	Gross Amount of Distribution	9/30/21 Account Balance
1	1	SAMCERA	9/15/2021	457(b) Plan to Plan Transfer	\$27,327.61	\$102,892.56
1	1	SAMCERA	8/19/2021	457(b) Plan to Plan Transfer	\$23,522.11	\$30,489.20
1	1	CalPERS	9/17/2021	457(b) Plan to Plan Transfer	\$15,925.94	\$58,324.10
1	1	SAMCERA	9/8/2021	457(b) Plan to Plan Transfer	\$14,417.44	\$84,798.73
1	1	SAMCERA	9/29/2021	457(b) Plan to Plan Transfer	\$9,594.64	\$4,201.90
1	1	SAMCERA	9/24/2021	457(b) Plan to Plan Transfer	\$6,146.62	\$51,825.07
1	1	SAMCERA	9/15/2021	457(b) Plan to Plan Transfer	\$5,071.91	\$44,684.90
1	1	SAMCERA	8/19/2021	457(b) Plan to Plan Transfer	\$4,319.23	\$33,381.17
1	1	SAMCERA	9/10/2021	457(b) Plan to Plan Transfer	\$4,191.31	\$5,797.06
1	1	SAMCERA	8/19/2021	457(b) Plan to Plan Transfer	\$4,124.53	\$77,525.96
1	1	SAMCERA	9/10/2021	457(b) Plan to Plan Transfer	\$3,498.33	\$55,406.04
1	1	SAMCERA	9/23/2021	457(b) Plan to Plan Transfer	\$1,791.92	\$2,742.27
Subtotal Rollover Out to SamCERA 12 transactions					\$119,931.59	

Plan Number	Subscriber Name	Payee Name	Post Date	Payee Type	Gross Amount of Distribution	9/30/21 Account Balance
1	1	Ameriprise Financial	09/14/2021	IRA Rollover	\$1,679.82	\$0.00
1	1	Ameriprise Financial.	09/14/2021	Roth IRA Rollover	\$20,706.06	\$0.00
1	1	AssetMark Trust	08/17/2021	IRA Rollover	\$66,480.45	\$0.00
1	1	Charles Schwab	09/22/2021	IRA Rollover	\$694,604.59	\$0.00
1	1	Charles Schwab	09/08/2021	IRA Rollover	\$215,197.31	\$0.00
1	1	Charles Schwab	09/14/2021	IRA Rollover	\$189,314.46	\$0.00
1	1	CHARLES SCHWAB	07/02/2021	IRA Rollover	\$28,986.31	\$0.00
1	1	Charles Schwab & Co., Inc.	09/21/2021	IRA Rollover	\$299.57	\$35.57
1	1	Charles Schwab & Co., Inc. .	09/21/2021	Roth IRA Rollover	\$249.64	\$35.57
1	1	Charles Schwab & Company	07/14/2021	IRA Rollover	\$78,580.27	\$0.00
1	1	Charles Schwab & Company	07/16/2021	IRA Rollover	\$3,185.12	\$0.00
1	1	E TRADE SECURITIES LLC	08/11/2021	IRA Rollover	\$48,296.07	\$0.00
1	1	E*Trade Securities	08/30/2021	IRA Rollover	\$28,262.71	\$0.00
1	1	Edward Jones	07/22/2021	Roth IRA Rollover	\$20,274.62	\$0.00
1	2	Edward Jones.	07/22/2021	IRA Rollover	\$359,027.38	\$0.00
1	1	Fidelity	09/10/2021	IRA Rollover	\$4,700.70	\$0.00
1	1	Fidelity Investments	08/25/2021	IRA Rollover	\$1,990.39	\$0.00
1	1	Fidelity Investments	08/09/2021	Roth IRA Rollover	\$1,468.19	\$0.00
1	1	Fidelity Investments	08/31/2021	IRA Rollover	\$674.17	\$0.00
1	1	Fidelity Management Trust Co	09/10/2021	IRA Rollover	\$8,466.17	\$0.00
1	1	Fidelity Management Trust Co.	09/22/2021	Roth IRA Rollover	\$3,551.56	\$0.00
1	1	FIIOC.	07/08/2021	IRA Rollover	\$2,333.27	\$0.00
1	1	FMTC	08/06/2021	IRA Rollover	\$391,789.86	\$0.00
1	1	FMTC	09/27/2021	IRA Rollover	\$35,230.08	\$0.00
1	1	FMTC	09/23/2021	IRA Rollover	\$6,613.23	\$0.00
1	1	FMTC	08/09/2021	Roth IRA Rollover	\$2,330.21	\$0.00
1	1	Great West Trust Company LLC	09/20/2021	Roth IRA Conversion Rollover	\$85,000.00	\$782,361.68
1	1	Great West Trust Company LLC	08/19/2021	IRA Rollover	\$10,000.00	\$14,224.12
1	1	Great West Trust Company LLC	08/05/2021	Roth IRA Rollover	\$747.61	\$0.00
1	1	Great-West Trust Company LLC	08/16/2021	IRA Rollover	\$22,403.85	\$0.00
1	1	Interactive Brokers LLC	09/15/2021	IRA Rollover	\$254,726.97	\$0.00
1	1	Interactive Brokers LLC.	09/15/2021	Roth IRA Rollover	\$40,785.05	\$0.00
1	1	JP MORGAN CHASE	08/09/2021	IRA Rollover	\$61.28	\$0.00

Plan Number	Subscriber Number	Payee Name	Post Date	Payee Type	Gross Amount of Distribution	9/30/21 Account Balance
1	1	JP Morgan Securities	08/03/2021	IRA Rollover	\$202,138.69	\$0.00
1	1	JPMS	08/31/2021	IRA Rollover	\$223,129.27	\$0.00
1	1	JPMS	08/13/2021	IRA Rollover	\$949.98	\$0.00
1	1	JPMS	07/08/2021	IRA Rollover	\$3.91	\$0.00
1	1	MassMutual	07/30/2021	IRA Rollover	\$39,526.03	\$0.00
1	1	MassMutual	09/13/2021	Roth IRA Conversion Rollover	\$3,697.00	\$96,618.39
1	1	MassMutual	07/01/2021	Roth IRA Conversion Rollover	\$3,556.84	\$63,809.23
1	1	MassMutual,	07/30/2021	Roth IRA Rollover	\$9,724.39	\$0.00
1	1	Merrill Edge	08/26/2021	IRA Rollover	\$158,444.39	\$0.00
1	1	Merrill Edge	08/31/2021	Roth IRA Rollover	\$4,784.04	\$0.00
1	1	Merrill Edge.	08/31/2021	IRA Rollover	\$55,505.71	\$0.00
1	1	Merrill Edge.	08/26/2021	Roth IRA Rollover	\$17,713.91	\$0.00
1	1	Merrill Lynch	08/30/2021	IRA Rollover	\$18,293.85	\$0.00
1	1	Morgan Stanley	07/20/2021	IRA Rollover	\$126,485.81	\$0.00
1	1	Morgan Stanley	09/30/2021	IRA Rollover	\$56,555.61	\$0.00
1	1	National Financial Services	08/25/2021	IRA Rollover	\$122,929.88	\$0.00
1	1	National Financial Services	08/18/2021	IRA Rollover	\$19,897.51	\$0.00
1	1	Nationwide	09/09/2021	IRA Rollover	\$12,395.70	\$0.00
1	1	Nationwide	08/18/2021	IRA Rollover	\$5,063.22	\$0.00
1	1	Nationwide	09/10/2021	IRA Rollover	\$230.77	\$0.00
1	1	Pershing LLC	07/12/2021	IRA Rollover	\$23,463.57	\$0.00
1	1	Principal Trust Company	09/20/2021	IRA Rollover	\$5,211.73	\$14,260.76
1	1	Reliance Trust Company	09/24/2021	IRA Rollover	\$16,718.95	\$0.00
1	1	Security Benefit, LLC	09/08/2021	IRA Rollover	\$34,728.07	\$0.00
1	1	SMCU	09/16/2021	IRA Rollover	\$25,000.00	\$76,383.79
1	1	TD Ameritrade	09/01/2021	IRA Rollover	\$23,441.71	\$0.00
1	1	TD Ameritrade	09/02/2021	IRA Rollover	\$9,956.02	\$0.00
1	1	TD Ameritrade	09/10/2021	IRA Rollover	\$1,108.33	\$0.00
1	1	TD Ameritrade	08/31/2021	IRA Rollover	\$571.05	\$0.00
1	1	TD Ameritrade Clearing	08/11/2021	IRA Rollover	\$114.78	\$0.00
1	1	TD Ameritrade Inst.	09/15/2021	IRA Rollover	\$88,486.72	\$0.00
1	1	Vanguard	07/15/2021	IRA Rollover	\$160,000.00	\$95,453.70
1	1	Vanguard	08/18/2021	IRA Rollover	\$98,187.47	\$0.00
1	1	Vanguard	07/19/2021	IRA Rollover	\$2,475.81	\$0.00
1	1	Vanguard	09/08/2021	IRA Rollover	\$2.78	\$0.00
1	1	VFTC	09/07/2021	IRA Rollover	\$91,493.30	\$0.00
1	1	VFTC	07/22/2021	IRA Rollover	\$177.98	\$0.00
1	1	Voya Institutional Trust	09/15/2021	Roth IRA Rollover	\$139,178.60	\$0.00
1	1	Voya Institutional Trust	09/15/2021	IRA Rollover	\$48,391.66	\$0.00
1	1	Voya Institutional Trust Co.	07/02/2021	IRA Rollover	\$38,960.84	\$0.00
Subtotal Rollover Out to Other 73 transactions					\$4,516,712.85	

Total Rollover Out	85 transactions	\$4,636,644.44
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Call Center Reponse Time Report

San Mateo County Performance Standard:
Answer 80% of calls within 80 seconds

Quarterly Period	% of Calls Answered within 80 seconds	Performance Standard	% of Calls Answered Above or Below Standard
Q3 2021	71%	80%	-9%
Q2 2021	84%	80%	4%
Q1 2021	57%	80%	-23%
Q4 2020	33%	80%	-47%
Q3 2020	42%	80%	-38%
Q2 2020	70%	80%	-10%
Q1 2020	62%	80%	-18%



County of San Mateo

Participant Communications and Education 2021 Review and 2022 Plan

Armando Llanes

Our approach to employee engagement

Maximize employee engagement



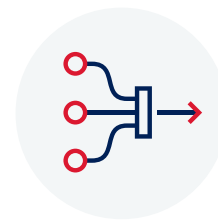
Language



Design



Delivery



Connection



Measurement



Improved results

Design and vocabulary matter



INCLUDE

Simple language

Bullet points

Graphics

Examples

Callout boxes



AVOID

Blocks of text

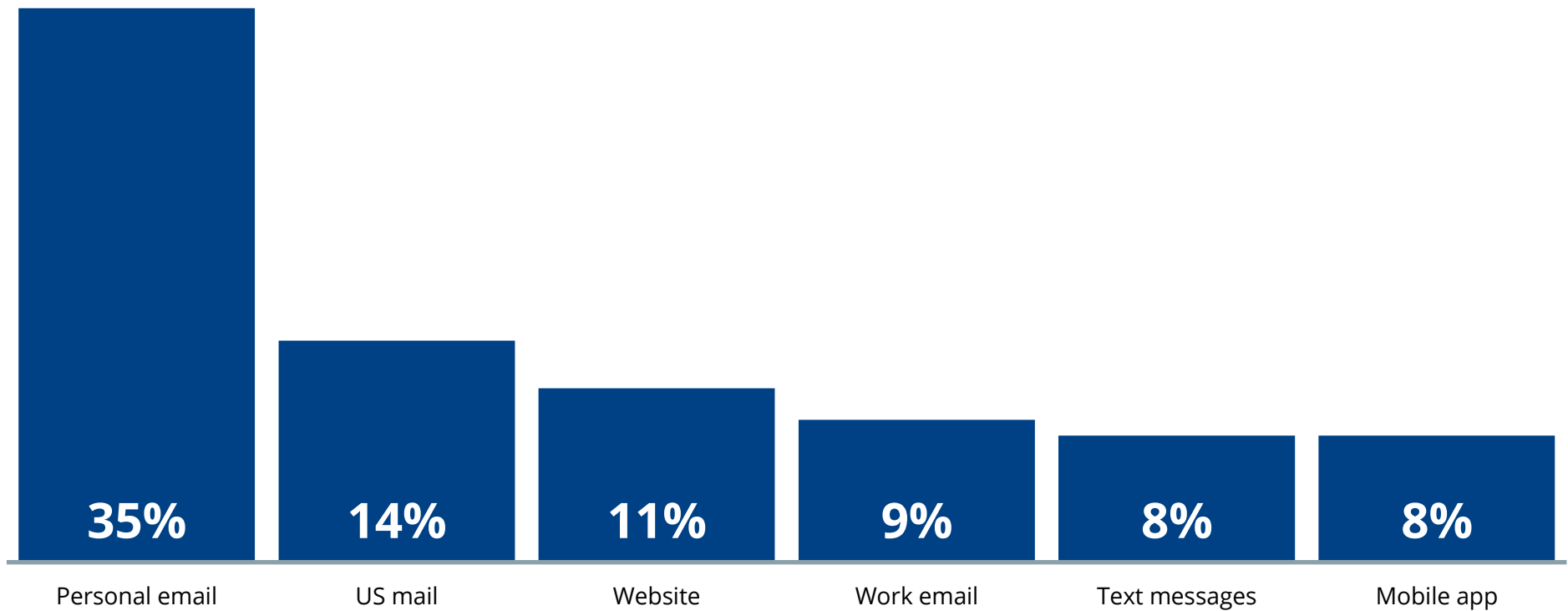
Intimidating design

Financial jargon

Too much information

Preferred method of communications

Employees prefer to receive communications about helping them better save for retirement and invest their money by personal email *



* This survey was conducted as part of the Thought Leadership at Empower to get a better understanding of financial jargon and communications in the industry. The online survey was conducted among 2061 US adults aged 18 and older, including 633 who participate in a workplace retirement DC plan. The research was conducted by Harris Poll on behalf of Empower April 29-May 3, 2021

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2021 communications calendar and 2022 communications planning

San Mateo

2021 Communications Calendar

Activity	Goal	Audience	Tactics	Timing
Welcome to Empower	Awareness	Participants	Email	January
NAGDCA Award Entry - Tech and Interactive Media Category	Award-winning entry	N/A	N/A	April
Participant Survey	Obtain participant feedback	Plan participants	Email and Survey Monkey	April
Fund Change Announcement	Awareness and investment education	Plan participants	Email	April
Non-Participant Survey	Obtain eligible, non-participating employee feedback	Eligible, non-participating employees	Email and Survey Monkey	May
Plan Highlights	Branding and compliance updates	All eligible employees and participants	Flyer/Handout	August
Target Date Fund Campaign	Awareness and investment education	Select plan participants	Email	September
Participant Resource Guide	Awareness of participant-related services	Plan participants	Email/Flyer	September

2022 Participant engagement calendar (Sample)

Activity	Goal	Audience	Tactics	Timing
Participation campaign	Increase plan participation	Participants eligible to save but not	Email	Q1
Beneficiary	Beneficiary Review/Assignment	All participants with a balance	Email	Q2
Savings campaign	Increase savings rates	All participants with a balance	Email	Q3
Consolidation campaign (if needed)	Encourage rolling into the plan	All eligible participants	Email	Q4

ONGOING ENGAGEMENT: Enrollment, virtual education, tools and calculators

Goals-based campaigns

Targeted campaigns designed to engage employees and drive specific action

Goal

Address unique needs of your employees and drive positive action.

Components

- Emails
- Infographics
- Postcards and mailers
- Information sheets

Plan details

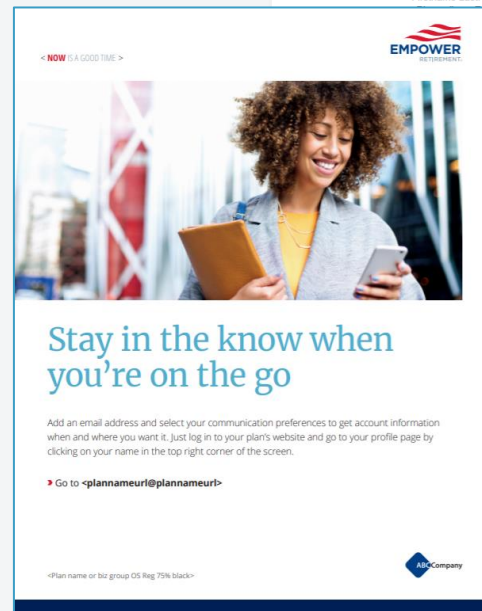
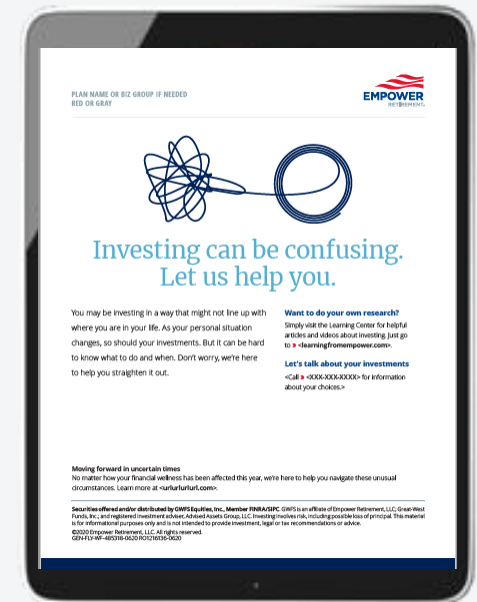
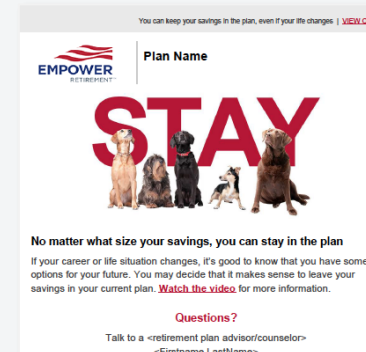
Ability to tailor plan name, logo, phone number, website and plan features offered



Targeted campaigns designed to engage employees and drive specific action

Targeted campaigns available:

- Email Capture
- Beneficiary Capture
- Participation
- Restart Savings
- Save More
- Investing
- Market Volatility
- Staying in the Plan



Event-based communication

Goal

Create awareness of workplace savings and retirement readiness by celebrating key events.

Events


- America Saves Week
- National Retirement Security Month

Some key messages

- Saving for your future is important.
- Now is a good time to review your account and savings goals.
- We're here to help!

Audience

All active employees eligible to participate in their plan



EMPOWER
RETIREMENT

National Retirement Security Month
NEXT MOVE
OCTOBER 2021

Put your financial future in motion!


<While your pension and Social Security benefits (if participating) are two great resources for your financial future, saving a little extra may help you with the additional retirement income you'll need to continue your current lifestyle once you retire.>

When you enroll in your retirement plan, you set off a chain reaction that becomes the foundation of your strategy to reach your long-term savings goals. Once you start saving, it begins a domino effect that allows you to:

- Take advantage of easy-to-use resources on your plan website to track your progress.
- Meet periodically with a representative to discuss your goals and adjust your strategy.
- Make plans that align with the financial future you are working to achieve.

Start saving today to put your financial future in motion!

ENROLL NOW



EMPOWER
RETIREMENT

National Retirement Security Month
NEXT MOVE
OCTOBER 2021

Checkmate: Help win your future by saving more

Looking for a winning strategy for your financial future? You may want to make saving more your next move to help you reach your retirement income goals.

Even small moves to save more now can become a game changer when you're ready to retire.

Saving \$2.25 more a month now

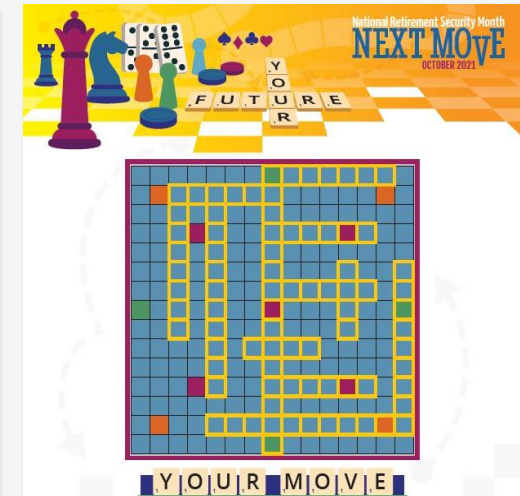
Could add \$1.00 more a month in retirement

EMPOWER RETIREMENT PLAN (R01) This is a hypothetical question to illustrate the value of consistent contributions. This hypothetical example does not represent an actual investment. Actual results may vary. This illustration is not intended to be a forecast of any individual's investment results. The illustration does not take into account the effect of fees and expenses. The illustration does not take into account the effect of taxes. The illustration does not take into account the effect of inflation. The illustration does not take into account the effect of market volatility. The illustration does not take into account the effect of market timing. The illustration does not take into account the effect of market correlation. The illustration does not take into account the effect of market diversification. The illustration does not take into account the effect of market risk. The illustration does not take into account the effect of market return. The illustration does not take into account the effect of market volatility. The illustration does not take into account the effect of market timing. The illustration does not take into account the effect of market correlation. The illustration does not take into account the effect of market diversification. The illustration does not take into account the effect of market risk. The illustration does not take into account the effect of market return.

The amount you save is an important piece to help you win your future.

Help keep your financial future in check by trying to save a little more each year.

SAVE MORE



National Retirement Security Month
NEXT MOVE
OCTOBER 2021

YOUR MOVE

Unscramble the words below and find the right spot for each word on the board:

LORNEL	VYFRSEDI	CINEARES	MICNDE
EVAS	SNEVTI	ALPN	LOSTULCAAR
CABYERNEIF	RARTTSE	TRMIEREINE	VPESERTREASTEN

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EMPOWER
RETIREMENT

Destination Retirement campaign

Goal

Create awareness of workplace savings and retirement readiness at any time during the year.

Messaging themes include

- Participation
- Saving more
- Beneficiary designations
- Account access
- Reaching savings goals

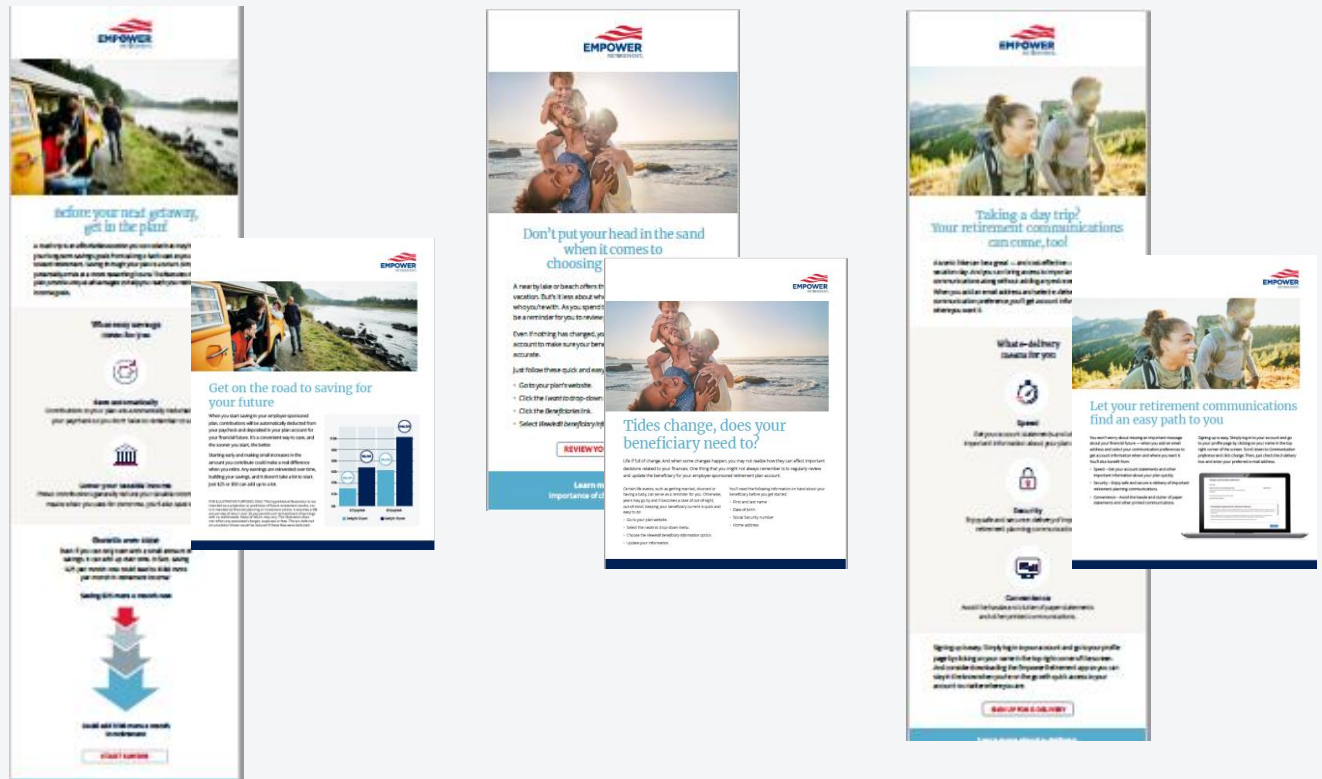
Note: Messaging themes can be used individually or as a series.

Components

- Emails
- Information sheets

Audience

Varies based on messaging



Education scorecard

Fiscal Year 2021 Educational Meeting Results



Date	Location	Group Meeting Attendees	One-on-one Session Attendees	Participant Action					
				Sign-up	Save More	Asset Allocation	Consol.	TRAK	MMR
OCT	14	84	37	22	37	45	7	3	73
NOV	13	88	24	19	31	51	16	9	71
DEC	13	120	16	17	33	47	17	11	13
JAN	12	33	17	22	11	13	6	9	5
FEB	10	13	26	13	10	17	13	23	10
MAR	15	162	47	49	49	69	32	37	62
APR	18	146	38	35	57	61	29	23	114
MAY	10	27	18	21	14	13	3	14	27
JUN	12	40	17	23	19	13	12	6	29
JUL	17	271	39	51	61	82	38	17	39
AUG	7	107	14	17	15	5	12	6	11
SEP	15	87	26	19	31	29	17	20	29
Total	156	1178	319	308	368	445	188	178	483

FY 2021 Educational Meeting Results

Additional Special Services	
Pre-Retirement Eligibility Reports	119
Pre-Retirement Eligibility Use	58*
Service Credit Purchases:	233*

* Based on reports from County Benefits and SamCERA, may not match transactional data

Goal-based campaign appendix

Email capture

Goal

Encourage participants to set communication preferences and provide their email address.

Components


- Email
- Mailer
- Information sheet
- Web banner

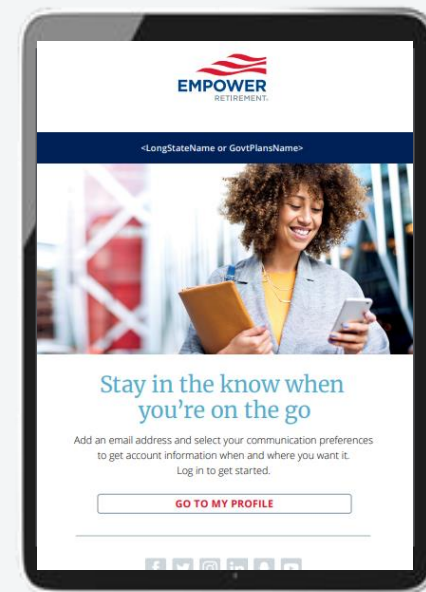
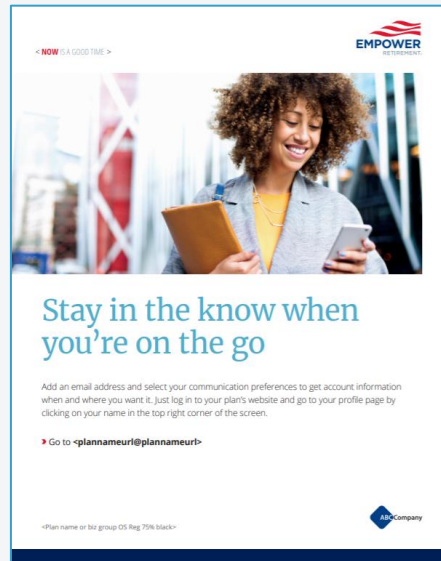
Key messages

- Stay in the know with your account.
- Tell us your communication preferences.

Audience

Eligible participants and terminated participants with no email on file

 Available in Spanish



Beneficiary capture

Goal

Encourage participants to name a beneficiary.

Components

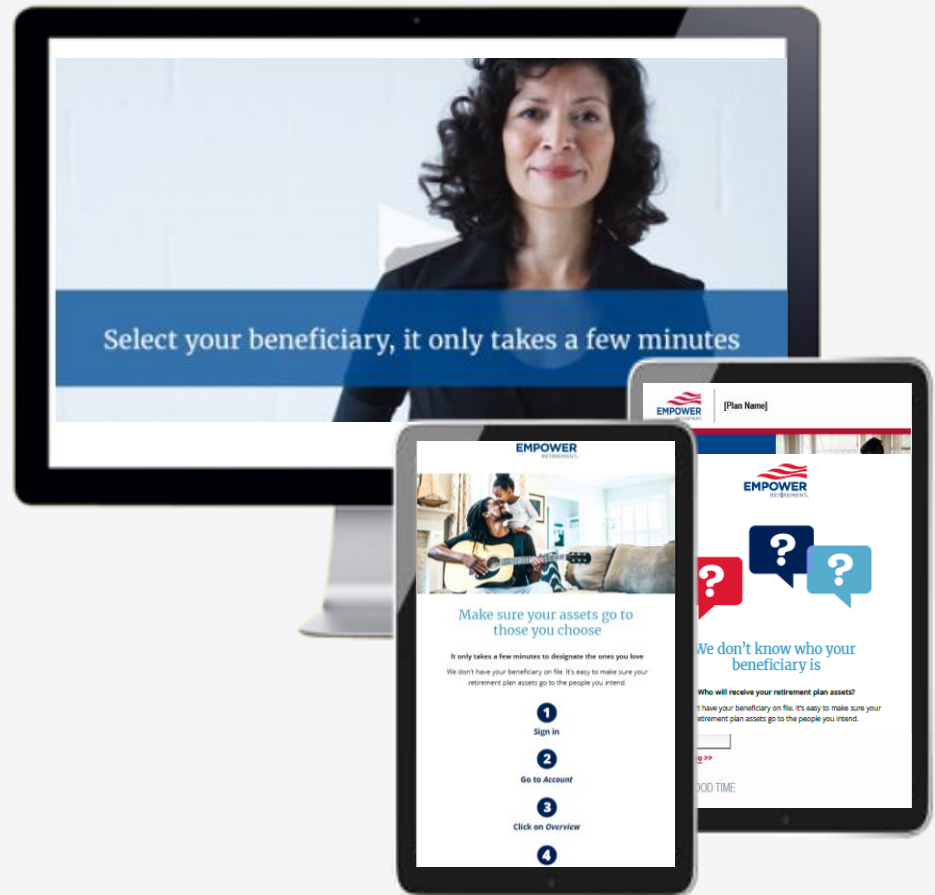
- Email
- Video
- Mailer
- Information sheet
- Web banner

Key messages

- You need a beneficiary on file.
- It just takes a few minutes.

Audience

Eligible participants and terminated participants (balance over \$1,000) with no beneficiary on file



ESP Available in Spanish

Participation

Goal

Encourage participants to enroll in the plan.

Components

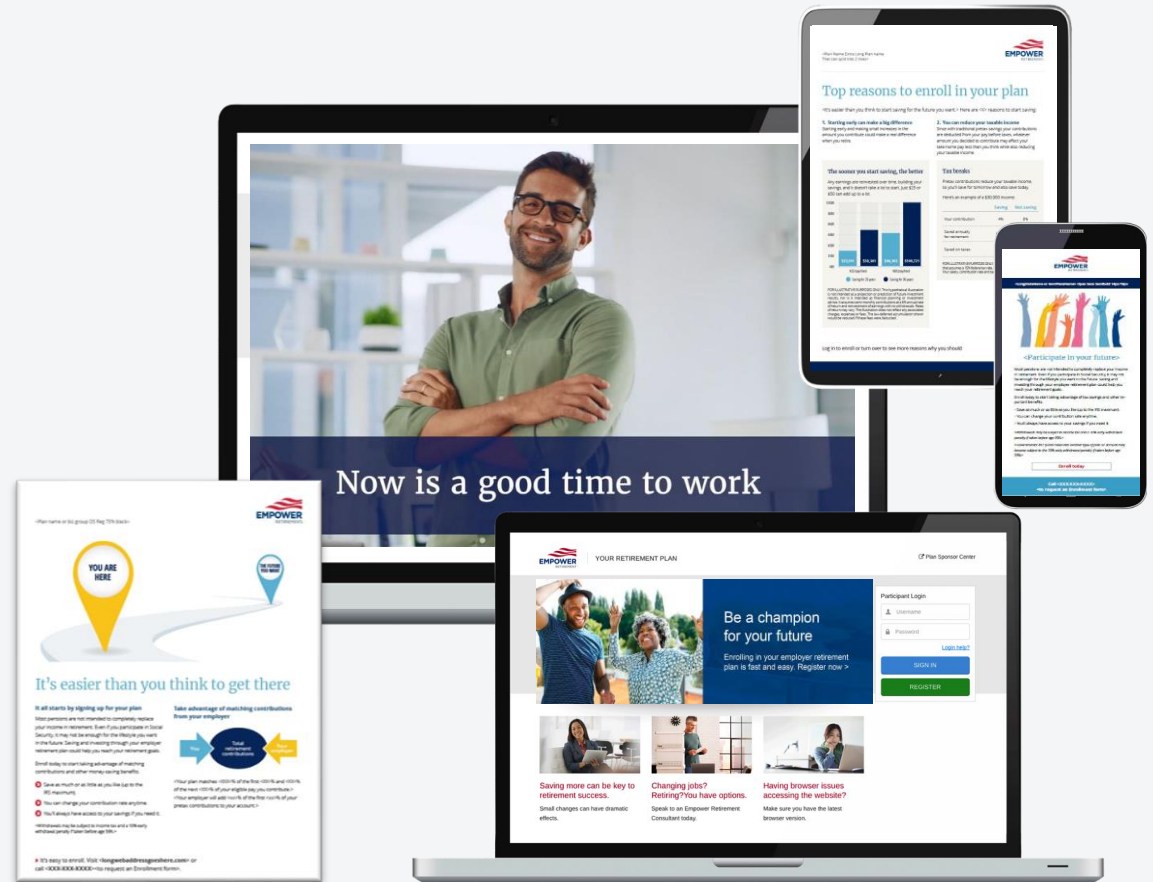
- Email
- Video
- Infographic
- Mailer
- Information sheet
- Web banner


Key messages

Take advantage of the benefits of participating in the plan.

Audience

Non-participating employees



 Available in Spanish

Restart savings

Goal

Encourage participants to save again after stopping.

Components

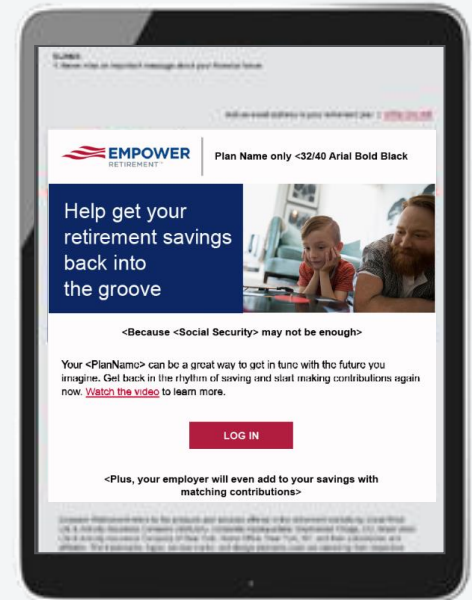
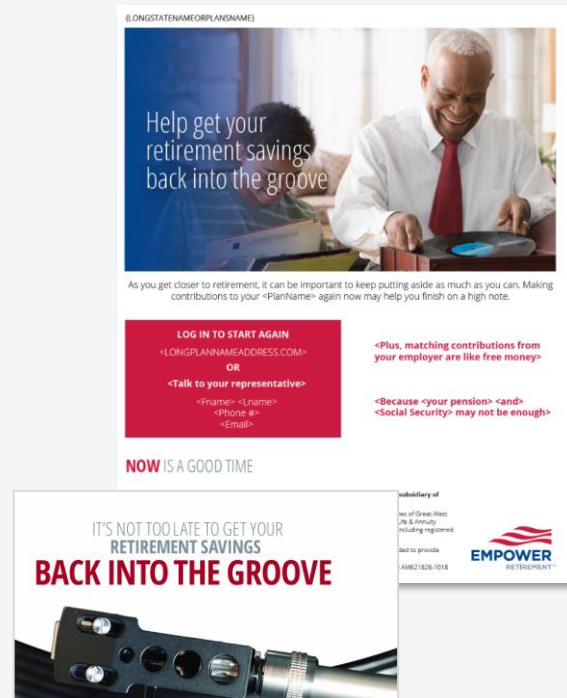
- Email
- Video
- Information sheet
- Postcard
- Web banner
- Social posts

Key messages

It's never too late for you to pick up where you left off and save for retirement.

Audience

Participants who have stopped contributing to their plan



Save more

Goal

Encourage participants to save more.

Components

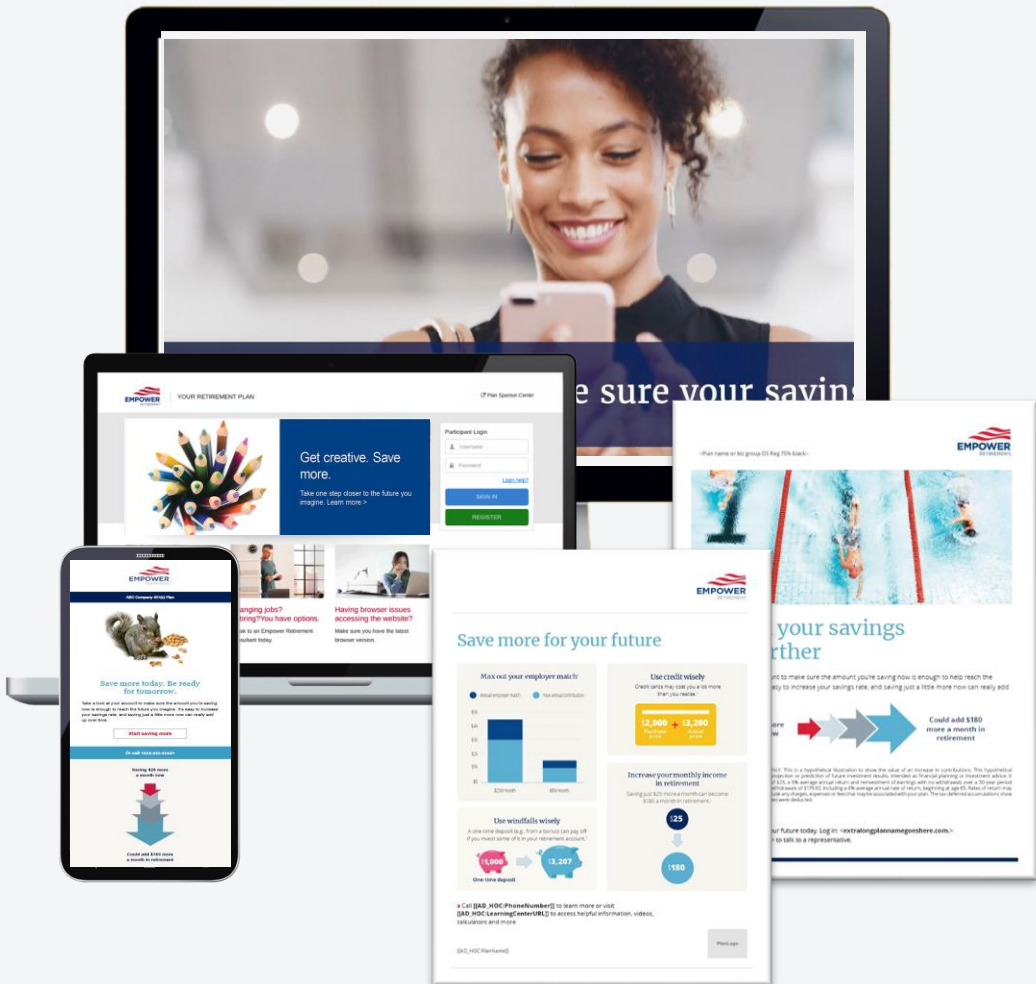
- Email
- Video
- Infographic
- Mailer
- Information sheet
- Web banner
-

Key messages

- Increased savings impact monthly retirement income.
- A little more can mean a lot.

Audience

- Eligible employees saving
- Choose target population by setting minimum/maximum deferral rates



 Available in Spanish

FOR ILLUSTRATIVE PURPOSES ONLY

FOR FINANCIAL PROFESSIONAL AND PLAN SPONSOR USE ONLY.

Investing

Goal

Encourage investing wisely and getting help.

Components

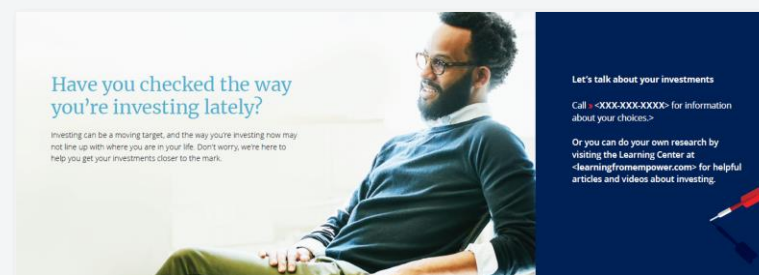
- Email
- Infographic
- Mailer
- Information sheet
- Web banner

Key messages

- Get your investing back on track.
- We're here to help.

Audience

- Invested in more than two asset allocation funds (e.g., target date funds)
- Invested in a single (non-asset allocation) fund
- Holding too little or too much equity given their age



Market volatility

Goal

Help participants understand their own risk tolerance and comfort level with taking on risk based on where they are relative to retirement.

Components

- Email
- Video/Brainshark
- Information sheet
- Brochure
- Web banner
- Social posts

Key messages

Keep your portfolio diversified to reduce the impact of market fluctuations. Do not time the market.

Audience

Participants active and terminated concerned about market volatility

 Select materials available in Spanish

We're here to help you make sense of what's happening now | [VIEW ONLINE](#)

EMPOWER RETIREMENT Plan Name only <32/40 Ar

Turn volatility into possibility

What is market volatility?

Market volatility is a term used to describe the daily fluctuations, large and small, of the stock market. Volatility also describes the condition of a security, which is a general term used to describe an investment like a stock, bond or mutual fund. A security has high volatility if its value fluctuates frequently over a period of time, and low volatility if its value remains relatively steady over a period of time. Historically, a security with higher volatility indicates a riskier investment.

There are a wide range of factors that may affect market volatility such as world events, performance of certain sectors of the market, political factors and natural disasters. Most of these factors are beyond investor control and happen unexpectedly.

Should I be worried about my savings during a volatile period?

When a dip in the stock market occurs, it's easy to become discouraged if you're invested in your retirement savings funds. But don't panic. Similarly, understanding your investment strategy and watching the risks through a stable pension may help you through your retirement goals.

Market volatility is a normal and inevitable part of the stock market and should be factored into your long-term investment strategy. It's the experience of a carry while earning a return on your investments in the moment and being in line with the end goal. It's a gap on the new stage shows that recovery periods have historically outperformed their market periods.

What is market volatility?
[Open the guide >>](#)

How to structure your investments for downturns
[Watch the video >>](#)

Learn why a long-term investment is so important
[Get our insights >>](#)

A few things to remember

- It may be wise to stay invested instead of timing the market.
- Keeping your portfolio diversified may soften negative impact
- Before making investment changes, consider the long-term

HAVE QUESTIONS?
[CALL XXX-XXX-XXXX](#)

NOW IS A GOOD TIME

The value of being a long-term investor in a volatile market

It's only natural to be concerned with the economy and what it means for your personal financial future. Though retirement may be a long way off for many of us, the volatility of the stock market today may challenge the decisions you make on saving for retirement.

When markets are uncertain, it can be tempting to miss all your assets the long-term investment. However, there are ways to help you stay on track. The history of the stock market shows that long-term investors who stay invested in the market have outperformed those who tried to time the market.

When you invest in the market, you're not just investing in the future, you're also investing in the present. Investing in the market today means you're also investing in the future. The history of the market shows that long-term investors who stay invested in the market have outperformed those who tried to time the market.

The cost of missing the market's best days

If you had missed the market's 10 best days over the last 20 years, your total investment would have been 1.2% less than if you had stayed invested.

Scenario	Return
If you miss the market's best days	1.2%
If you invest the market's best days	1.2%

STAY THE COURSE
Riding out market volatility

Subir: Consejo a perspectiva de mercados volátiles. Retirador: Consejo a propósito de comprender lo que está sucediendo actualmente.

EMPOWER RETIREMENT

Plan Name

La volatilidad de los mercados financieros no puede decir una cosa con certeza: la volatilidad es parte normal de la vida. Si estás preocupado por la volatilidad, es importante que entiendas que la volatilidad es una parte normal de la vida. Si estás preocupado por la volatilidad, es importante que entiendas que la volatilidad es una parte normal de la vida. Si estás preocupado por la volatilidad, es importante que entiendas que la volatilidad es una parte normal de la vida.

Como estructurar su cuenta ante mercados volátiles. Ve al índice.

Conoce por qué una estrategia a largo plazo es tan importante. Conoce los riesgos de invertir.

¿Cuáles son los riesgos de invertir?

- Puede ser aconsejable que mantenga sus inversiones en lugar de intentar deponerlos en los movimientos del mercado.
- Mantener su cuenta diversificada puede reducir los riesgos, negativos.
- Antes de hacer cambios en sus inversiones, considere los efectos a largo plazo.

La volatilidad de los mercados financieros no puede decir una cosa con certeza: la volatilidad es parte normal de la vida. Si estás preocupado por la volatilidad, es importante que entiendas que la volatilidad es una parte normal de la vida. Si estás preocupado por la volatilidad, es importante que entiendas que la volatilidad es una parte normal de la vida. Si estás preocupado por la volatilidad, es importante que entiendas que la volatilidad es una parte normal de la vida.

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Stay in plan

Goal

Make participants aware that upon retirement or termination of employment they can leave their money in the plan.

Components

- Email
- Video
- Information sheet
- Postcard
- Web banner
- Social posts

Key messages

Take advantage of potentially lower fee and continued access to online resources and local retirement counselors.

Audience

All eligible participants with a balance who are nearing retirement; once they have retired or separated, it's usually too late

You can keep your savings in the plan, even if your life changes | [VIEW ONLY](#)

EMPOWER RETIREMENT

Plan Name

STAY

No matter what size your savings, you can stay in the plan

If your career or life situation changes, it's good to know that you have some options for your future. You may decide that it makes sense to leave your savings in your current plan. [Watch the video](#) for more information.

Questions?

Talk to a <retirement plan advisor/counselor>
<Firstname LastName>
<Phone #> • <Email>

Keep these great benefits on a tight leash

Local support
As long as you're still in the plan, dedicated professionals are still available to help you explore your benefits.

Potentially lower fees
If you're thinking about moving your money to another retirement account option, be sure to compare fees. You might find that you'll save money by staying in your current plan.

Easy account management
You can keep using our secure website and the tools that help you develop a savings strategy for retirement.

Flexible payment options
If you're ready and eligible to withdraw money, you don't need to take it all out at once. You have many payment choices to meet your needs.

Personalized retirement strategy
Your plan offers Empower Retirement Advisory Services to help you manage your investments. There is no guarantee provided by any party that participation in any of the Advisory Services will result in a profit.

STAY

No matter what size your savings, you can stay in the plan

EMPOWER RETIREMENT

Keep these great benefits on a tight leash

Local support
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If you're ready and eligible to withdraw money, you don't need to take it all out at once. You have many payment choices to meet your needs.

Personalized retirement strategy
Your plan offers Empower Retirement Advisory Services to help you manage your investments. There is no guarantee provided by any party that participation in any of the Advisory Services will result in a profit.

As with any financial decision, you are encouraged to discuss your options with a financial advisor.

LOG IN AT
[CUSTOMER.COM](#)
TO VIEW YOUR SAVINGS AND BENEFITS

STAY

No matter what size your savings, you can stay in the plan →



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Thank you



COUNTY OF SAN MATEO

HUMAN RESOURCES DEPARTMENT Inter-Departmental Correspondence

DATE: November 4, 2021

TO: Deferred Compensation Advisory Committee

FROM: Jay Castellano, Employee Benefits

SUBJECT: ANNUAL PLAN SURVEY POLICY

RECOMMENDATION

Approve the attached Annual Plan Survey Policy.

DISCUSSION

Most years, a survey is administered to obtain input and feedback for the DCAC to make better-informed policy decisions, to develop needed initiatives and to provide clear direction to staff and consultants.

In February 2021, the DCAC approved its initial policy (attached) that codifies the purpose of the survey and the annual schedule for preparing and administering the survey. Per the policy, the DCAC's November meeting is its annual opportunity to review and update the policy. No changes are proposed to the policy approved last February.

COUNTY OF SAN MATEO DEFERRED COMPENSATION PROGRAM

POLICY ANNUAL PLAN SURVEY

PURPOSE

To administer a plan survey annually so that the Deferred Compensation Advisory Committee can make better-informed policy decisions, develop needed initiatives and provide clear direction to staff and consultants in a way that maximizes the plan utilization by all eligible participants and best meets participants' and non-participants' investment and savings needs.

POLICY

Target Audiences—The DCAC will provide direction to staff and consultants each year to administer separate surveys to participants and non-participants. The participant survey will include both current employees and former employees (e.g., retirees) with participant accounts.

Scope of Questions—The plan survey will ask questions about the deferred compensation programs and services. It will not ask questions about investments as those are addressed by the DCAC through the Investment Policy Statement.

Ongoing Versus Ad Hoc Questions—The survey will have a set of core questions that will be asked each year so that the DCAC can monitor status and progress in certain areas of the program. The survey will also have a set of ad hoc questions that will ask about specific areas of concern as determined each year by the DCAC.

Schedule—The annual survey schedule will be cyclical and administered in accordance with the following schedule:

QUARTER 1

Approve and administer annual survey

QUARTER 2

Report results to DCAC

Discuss and identify workplan initiatives as appropriate

QUARTER 3

Report results of last fiscal year's initiatives

Incorporate initiatives into the next fiscal year workplan

QUARTER 4

Discuss and provide direction on next calendar year survey

POLICY
ANNUAL PLAN SURVEY

The DCAC will review and approve this policy annually as part of its Quarter 4 discussion on the next year's survey.

History

February 25, 2021	Approved
November 4, 2021	(action)

**COUNTY OF SAN MATEO
DEFERRED COMPENSATION PROGRAM**

ANNUAL PARTICIPANT/NON-PARTICIPANT SURVEYS

PARTICIPANT SURVEY

Online survey introduction

Dear County of San Mateo Deferred Compensation Program Participant:

Your input is needed! The County of San Mateo Deferred Compensation Plan is conducting a survey of our participants. This survey is voluntary and confidential.

We are interested in your feedback and your input will help us identify ways to better meet your needs.

TAKE THE SURVEY

CORE (EVERY YEAR) QUESTIONS

Demographic Questions

1. What category best explains your employment type?
 - Active employee
 - Retiree

2. Which age band includes your current age?
 - Under 30
 - 30-39
 - 40-49
 - 50-59
 - 60 or older

3. How long have you (did you) work for the County?
 - Less than five years
 - Five to 10 years
 - 11 to 15 years
 - 16 to 20 years
 - 21 to 25 years
 - More than 25 years

4. How long have you participated in the deferred compensation plan?

- Less than one year
- One to <five years
- Five to <ten years
- 10+ years

5. What is your gender?

- Female
- Male
- Nonbinary
- Transgender Female
- Transgender Male
- Not listed
- Prefer Not to Answer

Programmatic Questions

6. Which aspects of the County's program are most important?

- Plan design (*Refers to the framework of a retirement plan, defined by characteristics such as contribution limits, distributions...etc.*)
- Investment options (*Refers to the wide range of investment options available as part of your plan*)
- Communication & education (*Refers to the availability of resource materials and seminars on topics related to savings and investing*)
- Retirement readiness (*Refers to being financially prepared for retirement*)

7. How are we doing in each of these same areas?

a. Plan design

1 ----- 2 ----- 3 ----- 4 ----- 5
Very dissatisfied Neutral Very satisfied N/A

b. Investment options

1 ----- 2 ----- 3 ----- 4 ----- 5
Very dissatisfied Neutral Very satisfied N/A

c. Communication & education

1 ----- 2 ----- 3 ----- 4 ----- 5
Very dissatisfied Neutral Very satisfied N/A

d. Retirement readiness

1 ----- 2 ----- 3 ----- 4 ----- 5
Very dissatisfied Neutral Very satisfied N/A

8. From which communication format do you prefer to learn about deferred compensation?
(Select all that apply.)
- Brown bag
 - On-site drop-in
 - Mailers by Empower (previously MassMutual)
 - Articles in Benefits newsletter
 - Virtual individual meetings
 - Virtual group meetings
9. Have you attended educational meetings facilitated by your retirement group at Empower Retirement (previously MassMutual)?
- Yes
 - No
10. If no, please indicate why not.
- Work conflict
 - Personal conflict
 - I was not informed of the meeting(s).
 - I did not wish to attend.
 - The meeting topic did not apply to me.
11. If yes, please indicate the type of meeting(s) you've attended. (Select all that apply)
- One-on-one meeting
 - Group presentation
12. How satisfied were you with the meeting(s) you attended?
- Very satisfied
 - Satisfied
 - Neutral
 - Dissatisfied
13. Have you logged into the RetireSmart website?
- Yes
 - No
14. If no, why not?
- I didn't know about the RetireSmart website
 - I'm unable to access the RetireSmart website
15. If yes, how satisfied are you with the resources available?
- Very satisfied
 - Satisfied
 - Neutral

- Dissatisfied

16. Have you used the MapMyFinances Tool?

- Yes
- No

17. If no, why not?

- I didn't know about the MapMyFinances Tool.
- I don't know how to use the MapMyFinances Tool

18. If yes, rate your satisfaction

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied

19. Are you aware the retirement plan offers the following resources? (Select all that apply)

- A free Retirement Readiness Analysis from Financial Soundings
- I am not aware of any of these resources
- Managed investment accounts
- The ability to borrow from your account in the form of a home loan
- Access to a financial planner
- Target date fund investments
- MapMyFinances

20. What retirement education topics are you interested in learning more about? (Select all that apply)

- Pre-retirement planning
- Am I saving enough?
- Understanding investment choices
- Online tools and resources
- How the plan works
- Basic rules of investing
- MapMyFinances
- Other

21. How do you prefer to learn about the topics you selected above? (Select all that apply)

- On-site group meetings
- Virtual group meetings
- Printed educational materials
- Empower website
- San Mateo County intranet site/newsletter

- Phone representative
- MapMyFinances
- Other

VARIABLE (2021) QUESTIONS

22. After COVID, how important will virtual meetings be?

- Important
- Somewhat important
- Not important

23. Is your contribution rate automatically increasing annually?

- Yes
- No

24. If yes, do you value this service?

- Yes
- No

NON-PARTICIPANT SURVEY

Online survey introduction

Dear County of San Mateo Employee:

Your input is needed! The County of San Mateo Deferred Compensation Plan is conducting a survey. This survey is voluntary and confidential.

We are interested in your feedback and your input will help us identify ways to better meet your needs.

TAKE THE SURVEY

CORE (EVERY YEAR) QUESTIONS

Demographic Questions

1. Which age band includes your current age?

- Under 30
- 30-39
- 40-49
- 50-59
- 60 or older

2. How long have you worked for the County?

- Less than five years
- Five to 10 years
- 11 to 15 years
- 16 to 20 years
- 21 to 25 years
- More than 25 years

3. What is your gender?

- Female
- Male
- Nonbinary
- Transgender Female
- Transgender Male
- Not listed
- Prefer Not to Answer

VARIABLE (2021) QUESTIONS

4. Why are you not participating in the deferred compensation program? (Select all that apply)
 - Don't understand how the plan works
 - Don't understand the investment options
 - Can't afford to participate right now
 - Don't understand how to enroll in the plan
 - Not sure if I am eligible for the plan
 - Haven't gotten around to it
 - Didn't know we had a plan
 - Saving for retirement in some other way
 - My SamCERA pension will be enough
 - Don't like the investment options
 - Retirement is a long time away for me
 - Don't like the plan features
 - Don't think it is important
 - Other

5. What would be necessary to change your mind? (Select all that apply)
 - Employer match
 - Better investment selection
 - Better plan features
 - Understand the importance of the Deferred Compensation Plan
 - Better education
 - More user-friendly website
 - Individual meeting with a MassMutual/Empower rep
 - Online webcast presentation
 - Virtual 1:1 meeting a MassMutual/Empower rep
 - Nothing, I'm not participating
 - Other

6. What else could the County or the plan do to make participation more attractive?



Public Sector Retirement News & Views | Q4 2021



NEW SURVEY HIGHLIGHTS ADVANTAGES OF WORKING WITH SOLE RECORDKEEPER

A recent survey by the Principal Financial Group found that plan sponsors experienced significant advantages in working with a single recordkeeper, rather than using multiple providers. Principal surveyed over 300 plan sponsors in June/July 2021 and found that those working with a sole provider indicated time savings, greater consistency, and access to a high level of expertise and increased plan features. When it comes to participant concerns, plan sponsors indicated that plans under a sole provider arrangement generally had higher participant engagement and satisfaction, as well as a deeper understanding of their retirement savings benefits and how to take advantage of them.

The survey noted seven key findings:

1. *Plan Administration is more efficient with a single recordkeeper.* Plan sponsors noted that management and administrative experience across plans was more consistent when they worked with a sole provider. Additionally, they reported they were more likely to have access to integrated reporting about their plan.
2. *Single recordkeepers provide access to expertise and plan provisions.* Plan sponsors reported they were more likely to have access to deep subject matter expertise as well as access to specialized services for their plans.
3. *Plan sponsors say they want a single point of contact.* One point of contact can be an advantage in helping plan sponsors evaluate their overall retirement plan strategy, its effectiveness, and suggesting improvements.
4. *Working with a single recordkeeper may save time.* Sponsors with multiple recordkeepers reduced their time by 17 – 50% when they switched to a single provider. This translates to as many as 14 business days in a year.

5. *Multiple recordkeepers present other potential challenges.* Common challenges for the plan sponsor include needing additional resources to keep plan data in sync and acting as the middle person in coordinating recordkeepers – which includes coordinating participant communication, plan reporting, and testing, such as for payroll data transmission.
6. *Participants can benefit from a holistic view with a single recordkeeper.* Using a single recordkeeper can help the plan sponsor provide a more integrated and comprehensive experience to their employees, helping them understand all benefits available in retirement and how they work together. This can result in participants feeling more confident in their decision making, and lead to better outcomes for the individuals and the plan overall.
7. *Integration can benefit participant satisfaction and engagement.* Quite simply, plans with a single recordkeeper who are able to realize the benefits in the key takeaways described above, are more likely to have greater employee satisfaction in their retirement plans and benefits. Of plan sponsors offering a single provider plan, 73% rated higher employee satisfaction as one of their top three outcomes, where only 60% of plan sponsors with multiple recordkeepers included higher employee satisfaction in their top three. Better employee engagement had a similar reporting breakdown.

Plan sponsors with one recordkeeper may be able to spend much less time administering their retirement plans than those with multiple recordkeepers. This may allow them to work more strategically and offer products and services to their employees that could result in higher participant engagement, satisfaction, and overall retirement preparedness.

Your NFP Advisor is available to discuss the pros and cons of using sole or multiple providers in your plan, and how to determine the best arrangement for your organization and employees. For the full study report, click [here](#).¹

WASHINGTON UPDATE

House & Senate Pension Proposals Still Alive

In our last newsletter, we reported that the House Ways & Means Committee's bill, *Securing a Strong Retirement* (HR 2954), and the Senate's companion bill *Retirement Security & Savings Act* (S. 1770) contained several similar proposals for improving retirement savings plans. Both proposals received widespread praise from many factions of the industry, including NAGDCA, the U.S. Chamber of Commerce, AARP, labor organizations, and many investment providers. Both bills are still being discussed but have yet to be referred to Congress. Because of the strong support the proposals enjoyed, NFP remains optimistic that we will see material improvements, and will keep all clients apprised of developments and how your plans will be impacted.

GAO Issues Call for Improvements to Increase Participant Fee Understanding

The US Department of Labor (DOL) fee disclosure regulations have been in place for nearly a decade. The regulations require 401(k) plan sponsors to provide participants with comprehensive fee disclosures. While the DOL regulations are directed at 401(k) plans, most other types of plans have adopted the requirements as a best practice.

At the direction of the Senate Committee on Health, Education, Labor and Pensions (HELP), the Government Accountability Office (GAO) asked the DOL to assess the effectiveness of DOL's fee disclosure regulations. The GAO report, issued in July 2021, finds that many participants still do not understand the fees they are paying for their retirement savings accounts. In fact, an alarming 41% of those surveyed thought they paid no fees at all.

The GAO report offers several recommendations the DOL could implement to improve participant understanding of fees. Interestingly, many of the recommendations were derived by the GAO looking at best practices and successes around the world. The goal of the recommendations is to improve participant understanding of fees and improve overall retirement readiness. The recommendations include using consistent terminology for investment fees, giving participants tools to calculate fees associated with different investment options and providing educational information about the cumulative effect of fees over time.

Because this report was requested by the Senate HELP committee, it is likely that lawmakers are looking for future improvements to retirement plans. In the meantime, plan sponsors can work with their providers to develop educational information that would address certain findings – namely education to help participants understand the different types of fees they are paying and how they impact their savings over time, and to teach participants how to calculate fees and charges.

To view the full GAO report, click [here](#).²

KEEP TRACK OF YOUR ADMINISTRATIVE EXPENSES & REIMBURSEMENTS

Many of NFP's clients have arrangements where their administrative fees are reimbursed by their recordkeepers. The recordkeepers typically collect a small administrative fee from participant accounts and pass these amounts through to the plan sponsor to complete the reimbursement. Because the origin of the fee reimbursements is with participant accounts, NFP has learned that the IRS is taking steps to review the accounting for administrative fee reimbursements.

NFP recommends that all plans using an administrative cost reimbursement arrangement to cover their costs of administering the plan, describe the arrangement in plan governing documents. The Investment Policy Statement, investment guidelines or committee bylaws would be logical places to document and define the arrangement. It is advisable to include how the amount of the reimbursement is determined, how it is collected from the recordkeeper, and how it is transferred to the plan sponsor. ERISA requires that subject plans spend these reimbursements within one year of collection so that participant monies do not become commingled with corporate earnings. Governmental entities, of course, are not subject to ERISA, but like other aspects of plan administration, ERISA can be a valuable resource for best practices. That being said, there is no requirement for governmental entities to spend these monies annually. Many plan sponsors use these reimbursements to help establish reserves to cover the cost of infrequent expenditures, such as the cost of conducting an RFP for a recordkeeper, legal advice to the plan, or additional plan benefits, and NFP supports this practice. Finally, NFP recommends regularly – perhaps annually – reviewing the amount of the administrative charge and how it is spent, keeping good records of revenues and expenses, and ensuring that your committee is fully informed about the collection and use of fees.

HELPING YOUR EMPLOYEES WITH STUDENT LOAN DEBT

Student loan debt is having a tremendous impact on millennials' lives. It is influencing where employees choose to work, and how they live and spend their money. College graduates with student loans want help from employers in tackling this issue, and recent studies show that 86% of employees who get help stay an average of 5 years longer.³ Employers are getting the message and rapidly adopting student loan assistance programs – their challenge, however, is to find programs that do not create budget problems.

Thrive Flexible Matching Program is an innovative new budget-neutral employee benefit program, offered through a partnership with NFP. Thrive works best with employer-sponsored retirement plans that offer matching contributions. Thrive enables employees to contribute a portion of their salary to their student loan debt and allocate their employer's retirement plan match to their loans. The program is budget-neutral, as it utilizes employer matching funds which are already budgeted.

As employers evaluate and consider strategies to improve their ability to attract and retain employees, *Thrive* is breaking new and much needed ground. Research shows that 76% of prospective employees would consider student loan payment assistance as a deciding factor in accepting a job.⁴ The program is likely to become an important new benefit that will help leading-edge employers in appealing to current and prospective employees.

To learn more about how Thrive would work for your organization and employees, visit www.thrivematching.com or ask your NFP advisor.

About NFP

NFP is a leading insurance broker and consultant that provides employee benefits, specialized property and casualty, retirement, and individual private client solutions through our licensed subsidiaries and affiliates. Our expertise is matched by our commitment to each client's goals and is enhanced by our investments in innovative technologies in the insurance brokerage and consulting space.

NFP has more than 5,800 employees and global capabilities. Our expansive reach gives us access to highly rated insurers, vendors and financial institutions in the industry, while our locally based employees tailor each solution to meet our clients' needs. We've become one of the largest insurance brokerage, consulting and wealth management firms by building enduring relationships with our clients and helping them realize their goals.

For more information, visit [nfp.com](https://www.nfp.com).

NFP GOVERNMENTAL RETIREMENT PLAN EXPERTISE



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She has over 35 years experience exclusively assisting public sector plans, school districts, credit unions and other non-profits with their retirement and pension plans. Barbara has earned an MBA degree in finance from DePaul University. She passed the CFP® designation from the College of Financial Planning, the Certified Funds Specialist designation, the Chartered Mutual Fund Specialist designation, the Certified Retirement Administrator designation, and the ASPPA TGPC designation and the AIF designations.



Margaret Pierce is a governmental practice leader responsible for new business and client retention for NFP's Governmental and non-profit practices. Margaret provides over

20 years of experience in the retirement industry working at Smith Barney, TIAA and American Century Investments before joining NFP. Margaret earned her Bachelor of Science from Boston University and her MBA from the University of Massachusetts-Amherst. She passed the Accredited Investment Fiduciary Auditor (AIFA) and Certified Financial Planner (CFP®) designations.



Mindy Harris is a governmental practice leader that advises on best practices and industry trends for plan administration and development, and provides legislative and

best practices education to clients. Mindy works with record keepers in her clients' plans to establish and manage performance standards for plan services, providing reports and advice to clients about their record keepers' work towards meeting the performance standards. Mindy graduated from Portland State University with a Bachelor of Science degree in business administration, concentrating in financial management and accounting. Mindy also passed her CRC and CRA designations from InFRE.

Sources:

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